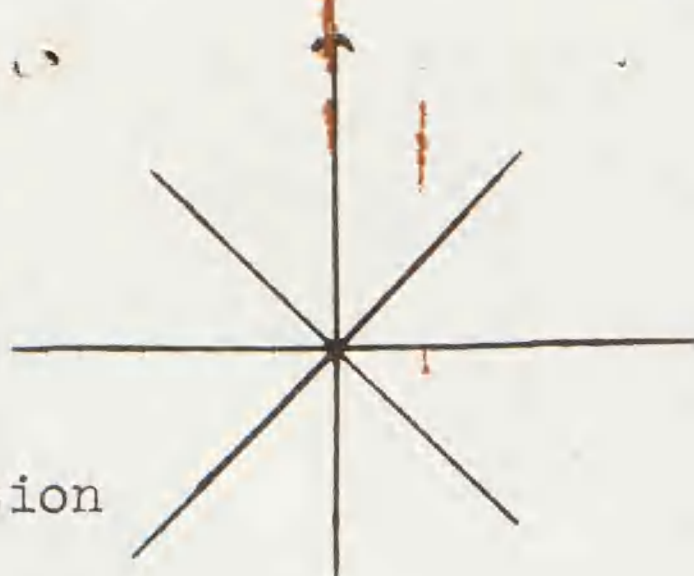


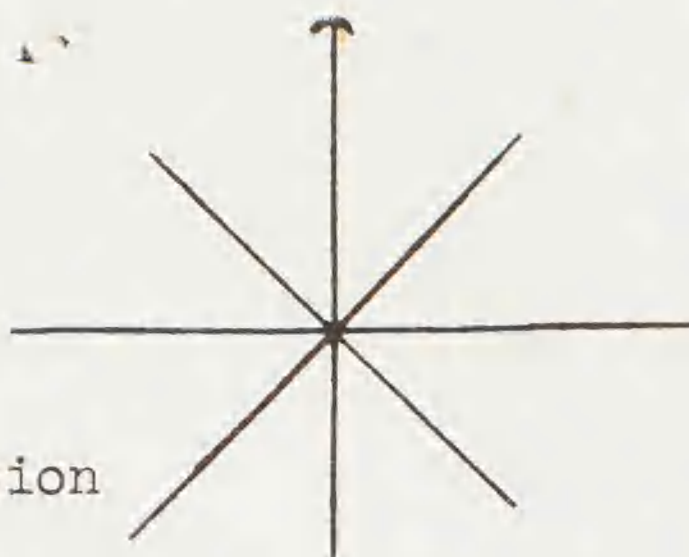
OBSERVERS:

Ship
Direction
 SMITHSONIAN INSTITUTION
 DIVISION OF BIRDS
 AT SEA DAILY LOG - E
SPECIMEN
orNON-GRIDDate 21 Feb 67
Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

1115					open observations ^{4 mi} off point. Fermin, San Pedro.
1115	Calif Gull	3			following.
	Gull sp.	1			imm
1120	Gull sp	150±20			sitting on water close to shore
1125	R-B Gull	1			imm on H ₂ O
1127	Hermann's	1	000		imm
1137					gray whale 1 - (33-41-118-25)
1143	R-B Gull	3			on log.
1145	Cal. Gull	7			10 Following.
1145	Gull sp	100±25			on H ₂ O towards shore
1147	Bonapart	1			ad on H ₂ O.
1155					Pilot whale? 10±2 — pilot whale,
1200	BLK	1	00		-imm 33+43 118-26
1205	Black Brant	11	00		on H ₂ O
1207	BLK	1			ad
1208	R-B Gull	1	00		Imm
1212	Whales	2 -	Cal. Grey?	^	(33-44 118-28)
1218	BLK	1			
1235	W. Gull	1	SE		ad.
1240	P. Jaeger or scua	1	00		
1241	Ancient murrelet	3			on H ₂ O
1243	BLK	1	00		imm.
1255		8			8 porpoise striped - 33-48 118-34
1257					Baird's & ^{striped} Common Dolphin 15 - mixed
1300					Gray whale 2 (33-48 118-35)
1303	BLK	1			ad 33-48 118-35
1312	BLK	4	SW		Ad's
1330	Cormorant	1	SW		
1355	BLK	1	00		ad.
1356	"	1	00		imm.
1401	R-Billed	1			following - ad
1404	W. Gull	1			4

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

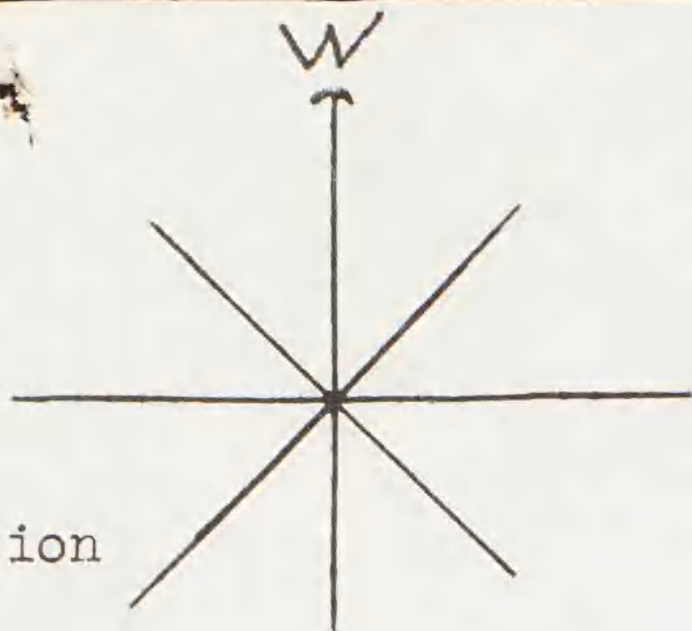
Date 21 Feb 67
Pg.# 2

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

1415	W. Gull	2	following	ads.	
1417	BLK	1	m	- ad.	
1417	W. Gull	2	following	imm.	
1425	Fulmar	1	m	dark	
1431	BLK	1	E	- ad.	
1435	Gulls	20±	Calif. following	following	
1513	W. Gull	1	following	imm.	heavy molt
1519	W. Gull	2	"	ads	scapulars
1558	Glacier G-W Gull	1	ce		now 6
1610	Rachys	2	SE		following ship from. Molt in progress
1615	BLK	2	S		Headed for land
1640	BLK	1	SE		ad.
1645	RB Gull	9			sitting on H ₂ O
1652	Black Brant	4			sitting on H ₂ O
1700	Cormorants	2	ce		sitting on H ₂ O
1707	W. Gull sp	100+	SW		Mostly Adults - Scattered Individuals over a
1710	Brant	1	W		wide front.
1719	Cormorants	5	W		low over H ₂ O
1725	"	1	SW		
1730	RB Gull	1	ce		Following ship ad
1736	Cormorants	2	SW		
1740	"	1	SW		
1744	Gulls	40+	ce		Following ship
1747					Sunset close observation.

BLK - ad NNN
1 ad III



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 22 Feb 67
Pg.# 1

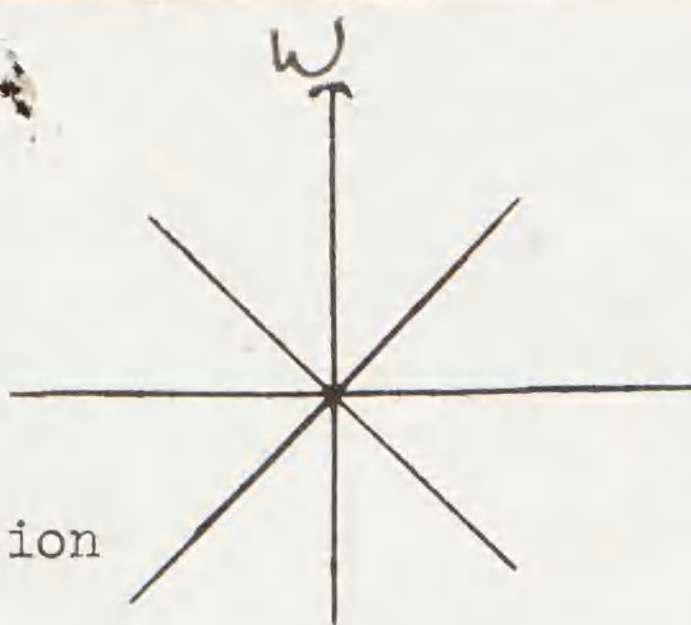
SPECIMEN

or

non-grid

TIME SPECIES # DIR. BAND NO. REMARKS

0625					Begin obs.
0625	H. Gull	4	following		ads
0630	H. G	6	"		now 10 - ads
0636	Fulmar	1	(M)		dark
0645	H. G.	6	following		now 16 - 5 ads, 1 imm
0646					Sunrise
0650	Fulmar	1	W		dark
0651	BLK	2	(M)		feeding imm
0653	BLK	2	W		ads.
0658	Fulmar	2	W		dark - joined by 0650
0659	Fulmar	1 (dark)			were on H ₂ O
0700					on H ₂ O - now 4 together - apparently searching/feeding
0705	BLK	1	W		Seal 34-56 121-50 (041610)
0706	"	1	N		ad.
0710	"	1	(M)		imm.
0717	Fulmar	1	W		dark
0720					Baird porpoise 15± 34-57 121-54
0725	Fulmar	1	(M)		dark
0729	BLK	2	N		ad
0738	"	3	NW		ad
0741	"	1	(M)		ad
0745	"	1	(M)		ad
0752	R. Auklet	1	ce		sitting on H ₂ O
0755	Seal	1			35-00 122-01 (072330)
0803	Alcid	1	ce		on H ₂ O
0805	Alcid	3	ce		on H ₂ O
0806	BLK	1	ce		
0807	BLK	1	S		Ad
0807	Bird	2	NW		Small fast winged Black above
0810	Fulmar	1	ce		Brown below low to H ₂ O flew with head up ad
0812	BLK	2			sitting
0812	H. Gull	5			sitting on H ₂ O collected by Lewis dark
0817					ads - follow - now 21
0830					Seal 34-59 122-06
0845	BLK	1	(M)		skiffing H ₂ O
0850	Alcid sp?	2	(M)		imm
0853	Fulmar	1	(M)		dark
0858	BLK	1	(M)		ad



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

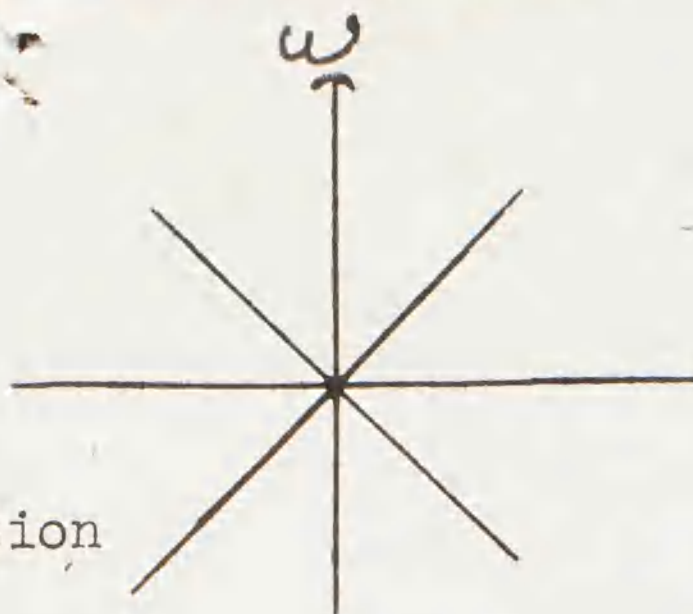
OBSERVERS:

Date 22 Feb 67
Pg.# 2

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

0859					Fur seal 2
0900					Fur seals - 3 34-57 122-07
0908	Fulmar	1	⊙		dark
0910	BLK	1	⊙		ad
0915	"	1	on H ₂ O		imm.
0917	"	2	on H ₂ O		ads
0930	Horned puffin	1	N		collected BAH
0938	BLK	⊙ 1	W		
0942	Fulmar	1	⊙		dark
0955	BLK	1	W		imm.
1000	Alcid sp	1	N		
1005	Fur seal				Fur seal
1010					
1030	BLK	1	F		ad
1031					Whales 2 - 34-59 122-28
1031	Fulmar	1	⊙		Fur seal
1035					dark
1037					Whales 2 34-59 122-28
1058	Forst. Pet.	1	⊙		
1059	BLK	1	NE		Ad
1100	Fulmar	1	W		dark
1110	BLK	4			Ad
1110	Fulmar	1			light
1116	BLK	1	NW		Ad
1122	P. Jaeger	1	E		Imm
1130					Stop to pick up skiff
1200					underway again
1205	BLK	1			sitting on H ₂ O, 1 imm.
1207					Herring Gull - 7 ad, 1 imm.
1213	Fulmar	1	SW		dark
1227	Alcid	1	NW		Flying large white under north
1227	"	2	"		" Small
1239	Fulmar	1	⊙		Sitting on H ₂ O dark
1305					Herring Gull 19 Ad, 6 Imm
1315	BLK	1	E		Ad
1325	Forst. T. Petrel	1	NW		
1327	BLK	1	NW		ad



Ship
Direction

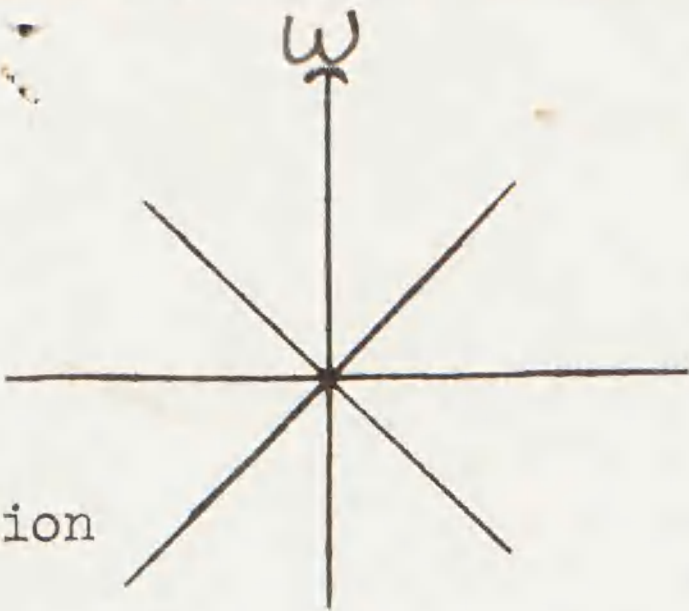
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 22 Feb 67
Pg. # 3

SPECIMEN
or

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
	1330	HG	4	Following		imm. - now 25, 20 ad, 5 imm
	1335	Fulmar	1			
J	1345					Seals - 2 by help - 34-59 122-53
	1350	HG	1	Following		ad. - collected TDL
	1405	Fulmar	1			dark
J	1406	Forktail?	1			no white rump
J	1407	Alcids	2			on H ₂ O - small - next to kelp
	1415	Forktail	1			
	1416	Fulmar	1			dark
	1417	BLK	3			ads. - 1 coll. DLB
	1420	BLK	1			ad.
	1420	"	1			imm
	1427	BLK	1			
	1440	BLK	1			ad
J	1442	BLK	2			ad & imm on H ₂ O, ad coll.
J	1447	BLK	2			U.
	1452	BLK	1	NW		ad. Feeding
	1455	"	3			ad. on H ₂ O
	1459	"	2			distant
	1502	BLK	2			imm on H ₂ O
	1504	Fork-tail	1			
	1507	Alcid	1			large
J	1507	BLK	1			ad preening
	1509	"	1			ad
	1515	BLK	2			imm, ad " on H ₂ O
	1520	Alcid	1			large: on H ₂ O
	1525	BLK	1			ad
	1525	Puffin, H.	1			on H ₂ O
	1530	BLK	1	NW		U
	1550	Fork-tail	1	W		
	1551	BLK	1			
J	1553	"	1			ad
	1554	"	1	N		ad
	1558	Fulmar	2			ad & imm
	1600	Pom. Jaeger	1	N		dark
	1603	BLK	1	N		light
	1608	"	1	N		ad
	1612	"	1			ad
	1614	"	1			ad



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 22 Feb 67
Pg.# 4

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

1622	BLK	1	07	imm
1623	"	1	following	imm
1634	Forktail s.p.	3	W	
1637	BLK	1	N	ad.
1645	BLK	1	E	ad
1647	"	3	NW	ad
1652	HG	5	following	ads - total 26 ads, 5 imm
1655	BFA	1	ce	Following ship
1703	BLK	1	ce	ad
1705	Fulmar	1	ce	sitting on the Davis
1705	BLIS	2	ce	
1725	BLK	1	SW	1 imm, 1 ad
1732	HG	42	following ship	Imm
1745	BLIS	1	ce	4 imm
1803	HG	48	ce	Imm following ship
1803			following ship	3 Imm

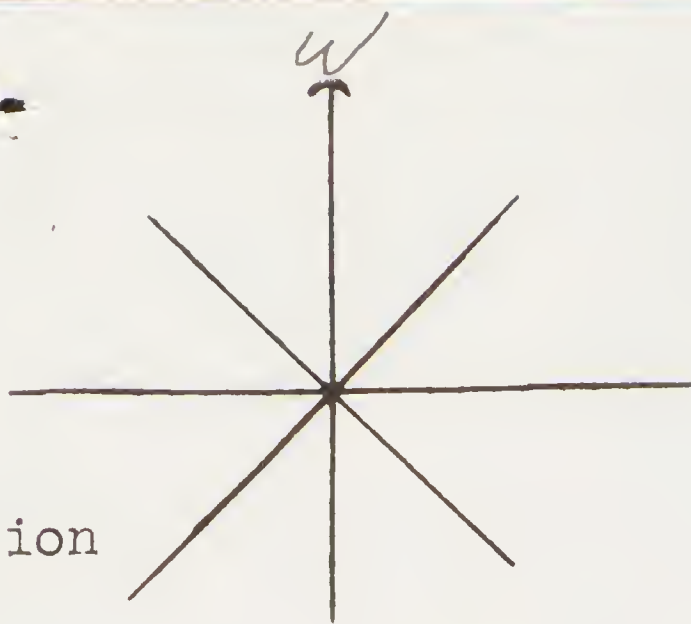
Sunset close observation

Grid only

Ad. BLK ~~|||||~~ (42) } + incident
Imm. ~~|||||~~ (15)

HG ad ~~|||||~~ (46)
Imm ~~|||||~~ (5)

Fulmar dark (12)
light (1)



Ship
Direction

Nocturnal Grid
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Lewis

Date 22 February 67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

2115

2205

2307

2315

Herring Gull (P)

Gull

2

1

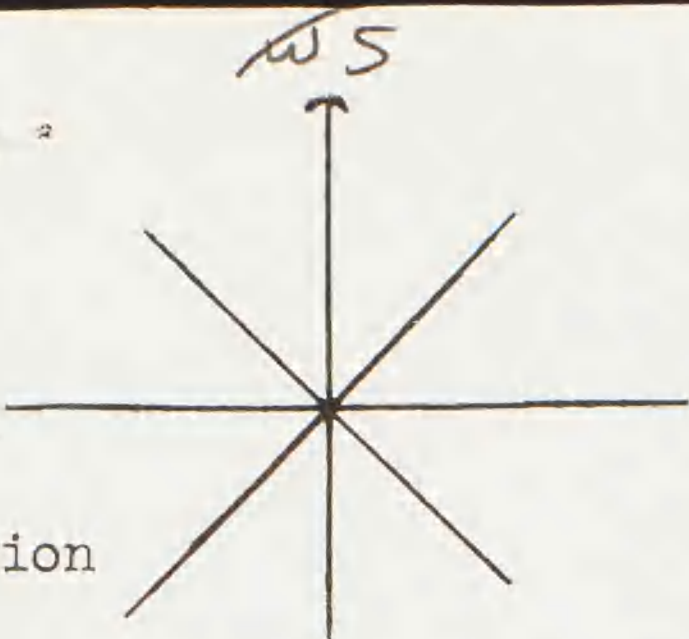
ae

E

begin observations

Ad sitting on H₂O

close observations



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

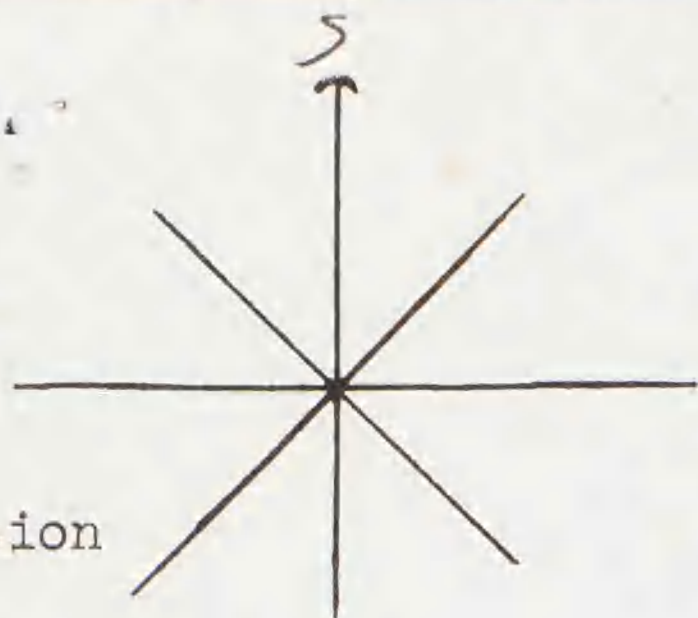
Date 23 Feb 1967
Pg. # 1

SPECIMEN or DIVURNAL GRID

Ship
Direction

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
	0705					open observations
	0710	HG	1			ad following
	0715	BFA	1			Following
	0717	BLK	1	NE		ad
TF	0720	R. Phalarope	5	W		
JJ	0750	BLK	1	N		U
TF	0812	R. Phalarope	5	N		
	0815					CC To S
	0820	BLK	2	ad		Sitting on the Imm
	0830	HG	4			ad following
	0830					stop to lower skiff.
	0837	BLK	1	NV		ad.
	0850	HG	2			Now 6 ad
	0850	BLK	1	N		U
	0851	Fulmar	1	ad		
	0910	BLK	1	N		ad
	0911	Fur Seal	1			3446 126-24
	0913	BLK	1	N		ad
	0917	HG	2			Now 8 ad.
	0919	BLK	1	NE		U
	0921	BLK	1	N		ad
	0930	"	1	ad		
	0937	Storm P.	1	ad		
	0940	BLK	1	ad		
	0941	"	2	N		U
	1005	"	1	N		ad
	1016	"	1	N		ad
	1018	"	1	N		ad
F	1025	Birds sp	154	N		ad.
	1030					skiff aboard
	1051	BLK	1	2		ad.
	1055	HG	1	following		imm
	1100	R. Phalarope	2	2		called (vocalized)
	1103	Storm pet.	1	2		
J	1120	HG	4	follow		ad - now 13, 12 ad, 1 imm
JJ	1140	BLK	1	2		ad
	1215	BLK	1	NE		
	1215	HG	1			Now 2 imm.
	1218	Storm Pet	3	2		
	1220	BLK	1	N		ad

BLK ad 111 111 111
imm 111 111
HG ad 111 111 111
imm 1



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

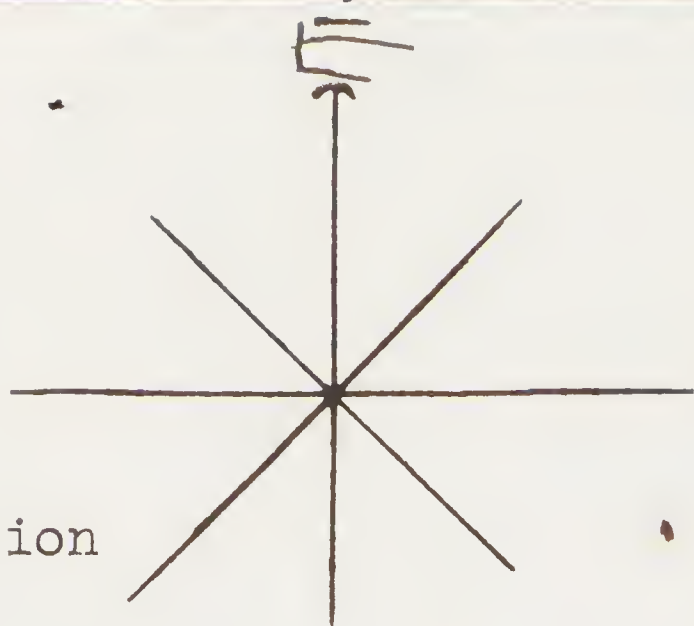
OBSERVERS:

Date 23 Feb '67
Pg. # 2

SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1226	Fork-tail	1 1	☉		
1247	BLK	1	N		
1300					change course to East.
1307	BLK	1	NE		ad.
1309	Glaucous-winged Gull	1	☉		imm.
1320					All STOP.
1340					Skiff in H ₂ O
1413					underway
1420	BLK	2	SE		Ad, Imm
1423					
C 1425	Rhino Auklet	1	ce		Seal 1 Lots of Jelly fish - Man-o-war type
C 1435	R. Phalarope	7	ce		Sitting on H ₂ O collected BATH
1520					Skiff aboard 1 collected BATH. Winter plum, body molt.
1550	BLK	1	N		imm.
1602	BFA	1	☉		NOW 2 following
1616					
J 1619	BLK	1	-		H. Gull 12 ad, 4 Imm
1658	"	1	E		Imm
1701	"	1	E		ad
1702	"	1	E		imm
1705	R. Phal	10			on H ₂ O, then flew
1707	BFA	1	follow		now 3
1730	HG	6			3 ad, 1 imm
1735	Fulmar	1			on H ₂ O - dark
1737	BFA	1			now 4
1740	R. Phal.	2	☉		
1742	Fulmar	1			on H ₂ O - dark
1745	"	1	"		"
1750	"	1	B		dark
1800	H. Puffin	1	W		
1813					close.

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

SPECIMEN
or

NOCT. GRID

Date Feb 23
Pg. # _____

TIME SPECIES # DIR. BAND NO. REMARKS

2100

Gull

1

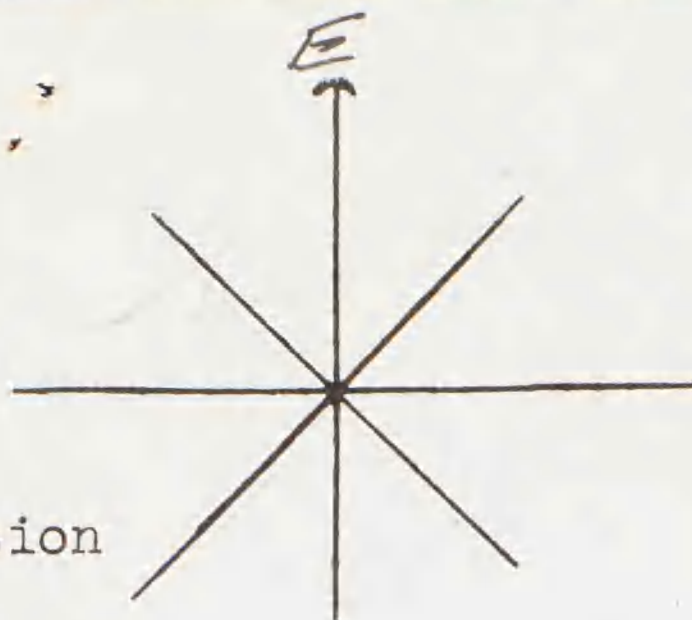
follow

Begin Dr

2123

2300

cease



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

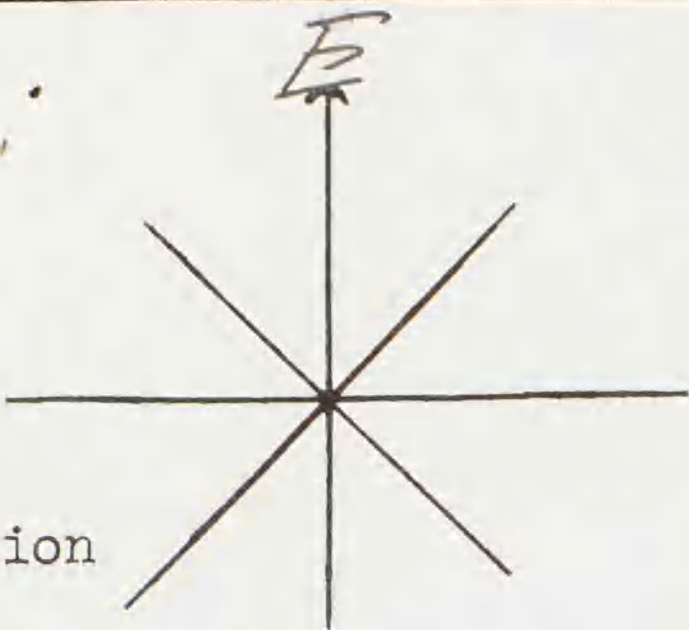
OBSERVERS:

Date 24 Feb 67
Pg.# 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0647				sunrise begin observations
	0649	F. Tailed Pet.	1	S	
J	0650	Alcid	1	ce	sitting on H ₂ O small
	0655	Alcid	1	NW	large
	0657	BLIS	1	ce	Following Imm
	0715	BFA	1	ce	Following
	0720	BLK	2	ce	Ad
	0720	BLK	1	ce	Imm
	0721	F. Tailed Pet	1	E	
	0729	Jaeger sp.	1	N	
	0755	Fulmar	1	E	dark
	0756	BFA	1	follow	now 2
	0803				seal 22 34-10 122-57
	0805	HG	5	Follow	4 ad, 1 imm
J	0810	Alcid	1	W	
	0830	Fork tail	1	ce	
	0835	Fulmar	1	ce	
	0836	Alcid	1	ce	dark
	0837			on H ₂ O	seal 34-10 122-51
	0837	Fulmar	1	ce	
	0837	GWG	1		imm
	0840	HG	43		Now 8 adult
	0900	HG	9		Now 17 Ad, 2 imm, 1 GWG imm
J	0905	BLK	1	W	imm
	0907	Pom. Jaeger	1	NW	at light
	0920				Far Seal 34-10 122-43
	0923				" " 1
	0927				" " 1
	0929				" " 1
	0930	BLK	1	ce	imm feeding
	0933	Fulmar	1	ce	light
J	0940	"	1	ce	dark
J	0958	"	1	ce	dark
	1006	"	1	ce	dark
	1007	BLIS	1	ce	Following Ad
	1008	"	1	ce	sitting on H ₂ O Imm
	1008	Fulmar	1	ce	" " Dark
	1010	BLIS	1	SW	Imm
J	1015	GWG	1	ce	Following Now 2 Imm
	1037	Fulmar	1	NE	light
	1040	"	1	ce	Dark screwing around ahead of ship



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

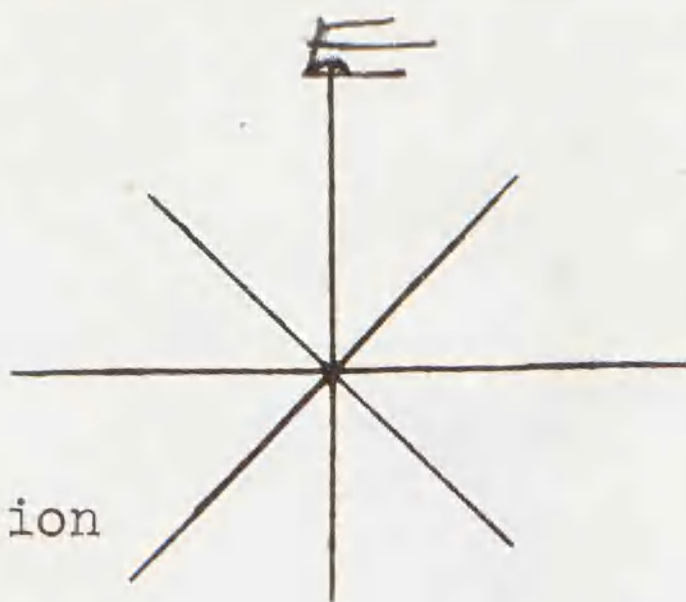
OBSERVERS:

Date 24 February 67
Pg. # 2

SPECIMEN
or

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
J	1047	Fulmar	1	NW	—	Davis
	1048	"	1	NW	—	"
	1054	"	1	NW	—	"
	1058	Jaeger sp	1	NW	—	"
J	1123	Fulmar	1	SE	—	dark
	1112	P. Jaeger	1	—	—	2 Gulls (Herring) noted pecking at underside of log.
	1115	Fulmar	1	SE	—	light phase, on H ₂ O
	1120	"	1	NW	—	dark
	1124	"	1	N	—	"
	1125	"	1	SE	—	"
J	1130	RA	1	—	—	on H ₂ O
	1131	Tuft. Puffin	1	SE	—	—
	1136	Fulmar	1	—	—	dark
	1138	R. Phalarope	1	—	—	calling
	1138	Fulmar	2	—	—	dark
	1139	BLK	1	—	—	imm
	1140	Fulmar	1	—	—	dark
	1144	P. Jaeg.	1	NE	—	light
	1144	WRSP	1	—	—	—
	1145	BFA	—	—	—	Now 2 following
	1145	Fulmar	1	—	—	dark
J	1148	Jaeger sp	1	—	—	on H ₂ O
	1200	Fulmar	1	—	—	dark
	1205	"	1	—	—	"
	1206	"	1	—	—	"
	1215	"	1	—	—	"
	1225	"	1	—	—	light
	1230	BLK	1	—	—	dark
	1232	—	1	W	—	ad
	1233	Fulmar	1	—	—	seal (041616) 3410 122-07
	1234	BLK	1	N	—	dark
	1240	Ful.	1	—	—	imm
	1241	"	1	—	—	dark
	1250	"	1	—	—	"
	1257	Jaeger	1	W	—	"
	1306	—	—	—	—	seal 3410 122-02
	1316	Fulmar	4	—	—	on H ₂ O - dark
	1317	BLK	1	W	—	imm

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

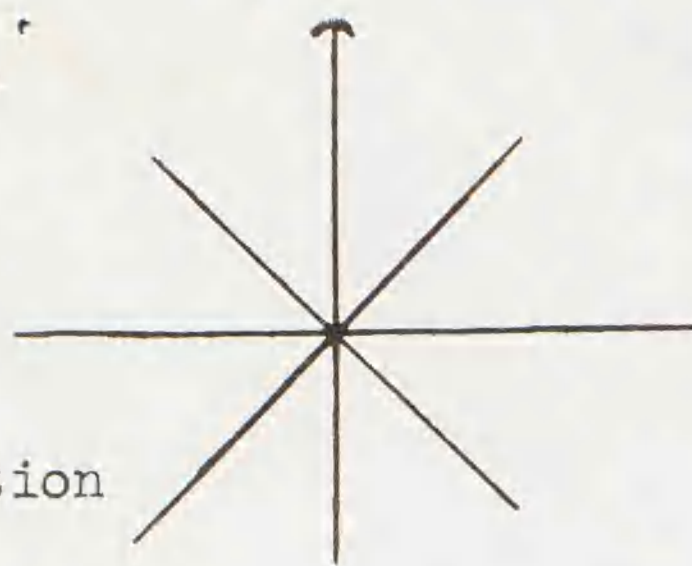
OBSERVERS:

Date 24 Feb 67
Pg. # 5

SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1319	BLK	1	⊙		imm
1322	Fulmar	1	ce		dark
1328	se				
1330	Jaeger	2	ce		Fur seal close 1 34-10 121-57
1335	Pomarine Jaeger	1	ce		sitting on H ₂ O.
1335	Fulmar	4	ce		Darks, sitting on H ₂ O
1342					went together
1345	Fulmar	2	ce		Fur seal 1 34-10 121-57
1349	"	5	ce		sitting on H ₂ O Darks
1352	Alcid	1	ce		Together Darks
1358	Jaeger	1	ce		on H ₂ O
1359					Darks, plus a little Pomarine, on Parasit.
1412	H. Puffin	1	NE		Seal 34-10 121-51
1415	Fulmar	1	ce		In Barn.
1415	F.T. Petrel	1	ce		Darks on H ₂ O
1423	BLK	1	w		Ad
1425	WRSP	1	SE		
1430	BLK	1	NW		Ad
1430	Fulmar	1	NW		Ad Darks
1432	BLK	1	NW		ad.
1436	Fulmar	1	ce		dark
1445	Fulmar	1			.. on H ₂ O
1455	Storm Pet.	1	w		
1457	Fulmar	1	N		dark
1500	"	1	"		"
1505	BLK	2			U
	Jaeger 4P	1			chasing BLK
1509	Pom Jaeg	2			on H ₂ O, 1 light, 1 inter.
1517					Fur seal? 2 34-10 121-35
1520	R A	4			together on H ₂ O
1526	BLK	1	ce		imm.
1523	Alcids	2			on H ₂ O
1540					Fur seal 34-10 121-31
1541	Rhino	1	⊙		
1545	"	3	ce		
1550	"	2	"		
1551	BLK	3	ce		2 ad, 1 imm — seal

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

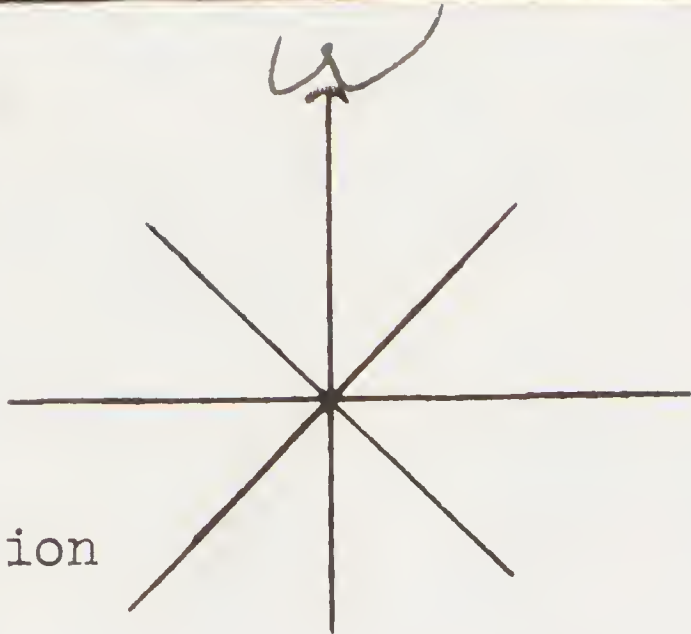
Date 24 Feb 67
Pg. # 4

SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1558					seal 34-10 121-28
1602	Rhino	1	on H ₂ O		
1603	Ful	1	dark		
1603					seal 34-09 121-28
1608	Fulmar	2	dark		
1609	BLK	1	imm		
1610					seal 34-08 121-27
1610					seal " "
1614	R. Auklet	2	S		
1635	BLK	1	E		
1640	Xanthus	1	on H ₂ O		
1643	RA	2			on H ₂ O
1655	BLK	1			ad "
1657	Fulmar	1	dark		7 have seen 2 dead sharks in last 10 minutes
1700					Fur seal 34-02 121-20
1703	BLK	1	N		ad
1703	Fulmar	1	dark		
1706	"	3			" on H ₂ O
1714	P. Jaeger	3			on H ₂ O
1716	BLK	1	ad		
1719	Fulmar	1	dark		
1722	BLK	1	ad		
1737	storm P.	2			
1756	H Gull	27			3 Imm
1756					Sunset

one distinctive adult present from at least 0900 this AM

BLK ad 13
imm 12
HG ad 24
imm 3
many more adults in the afternoon than in AM.



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN

or

Nocturnal bird

OBSERVERS:

23-24-25
Date 24 February 67
Pg. #

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
------	---------	---	------	----------	---------

2000

2030

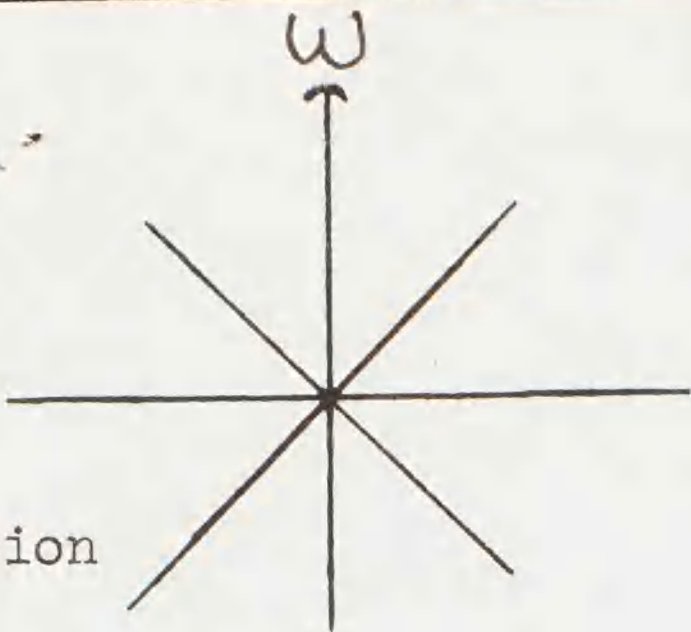
2155

2210

Gull

- open observations
- white w/ black tip.

Porpoise 5 33-20 12 1.29
→ close observations



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

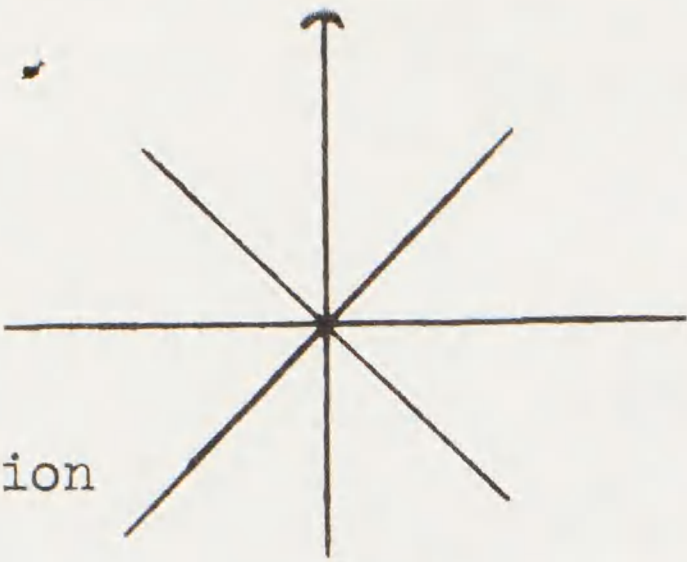
Date 25 Feb 67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0647				sunrise
	0650	HG	3		following 2 ad, 1 imm
	0735	HG	4		" - now 7 5 ad, 2 imm
	0817	HG	16		following 3 imm
	0905	BFA	1		Following.
J	0940	BFA	1		
	0945	"	1		Now 2
	0945	HG	24		" 3
	0950	BFA	1		3 of which imm.
	0955	"	1		now 4
	1025	BLK	3	W	now 5
	1037	"	1	W	1 imm.
	1040	BFA	1	W	1 imm.
	1101	BLK	1	Follow	now 6
	1122	BLK	1	ce	Ad
	1127	HG	24	ce	Following ship, 2 imm
		GWG	1	ce	4 Imm
		BFA	4	ce	Imm
		BLK	3	ce	2 Imm
J	1145	BLK	1	ce	all following ship
	1202	BLK	1	ce	1 imm
	1212				Now 5 imm HG following.
	1335	BLK	1	W	ad
	1337	BLK	2	W	on H ₂ O - 1 ad, 1 imm
	1350	"	2	W	1 ad, 1 imm (33-17)(24-17)
	1402				Seal
	1520	HG			Now total of 17, 8 of which are imm.
	1625	HG	30		22 ad, 8 imm - total
	1703	BLK	1	ce	Following Imm
	1715	GWG	2	ce	" "
	1755	HG	27	ce	6 Imm
		GWG	2	ce	Following ship
		BFA	7	ce	Imm
		BLK	1		one Banded
	1813				Imm

SI-MNH-958-e
Rev. 5-66



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

SPECIMEN
or

Nocturnal Grid

Date 25 Feb. 67
Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

2100

2112

BFA

3

Begin observation

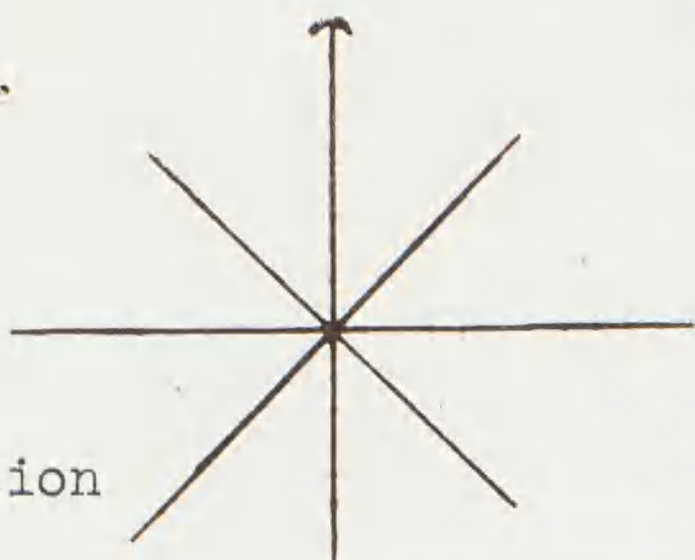
Following ship

2300

Still following at 2245

Close observations

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

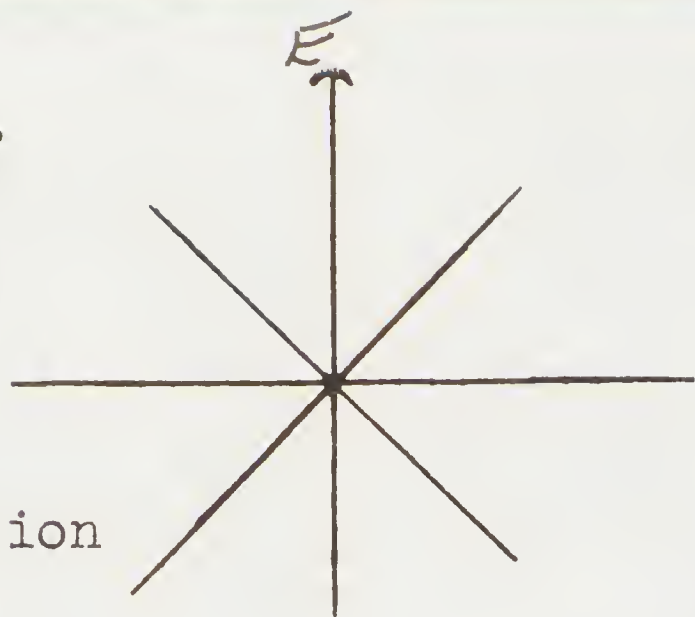
OBSERVERS:

Date 26 Feb '67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0658				Sunrise
	0700				Begin
	0700	HG	1		ad follow
		BFA	1		
	0710	"	1		"
	0715	HG	2		Now 2 " "
	0720	BLK	1	E	Now 3
	0720	HG	1		imm
	0728	WRSP	1		Now 4 ad.
	0731	ALCid	1		
J	0737	BLK	1		ad
	0804	Storm P.	1		
	0845	HG			now 10 ad - 1 coll: TSL
	0923	BLIS	1		Imm
	0925	R. Auklet	1	NE	
	0928	GWG	1		imm
	0935	white rump.	1		Follow
	1004	Storm P.	1		HG 1 coll: TSL
	1025	Storm Pet.	4	E	alternately on H ₂ O + flying
J	1030	WRSP	4		sitting on H ₂ O
TF	1105	WRSP	7	E	
	1111	WRSP	1	W	
J	1117	Xantus m	2		on H ₂ O
	1136	HG			Now 8 ad, 5 imm., 1 imm GWG
J	1155				
J	1200	BFA	1		11 small porpoises 33-29 125-11
J	1235	WRSP	2		Now 3
	1313	"	1		
	1340	GWG	2		Now 3 imm following
J	1350	BLK	1	E	imm.
	1408	BFA	1		Now 4 following.
	1410	BLK	1	E	imm
	1420	WRSP	1		
	1421	WRSP	5		
J	1457	BFA	5		Following ship
TF	1525	R. Phalarope	5	NW	
J	1655	HG			21 16 ad 5 imm
	1704	WRSP	1		
	1710	BLK	1		imm
	1720	WRSP	1		



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E
Diurnal Gull.

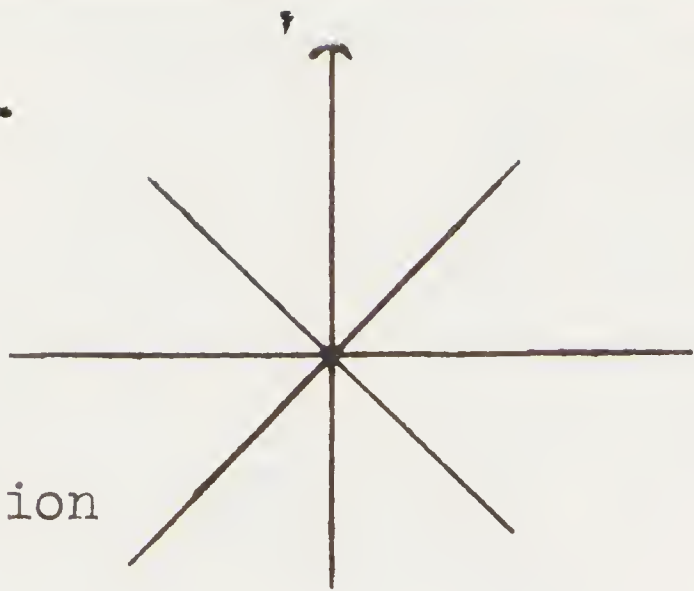
SPECIMEN
or

OBSERVERS:

Date 26 Feb 67
Pg. # 2

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1725	Fork-Tail	1	W		
1730					Total Albatross (B.F.) - 6
1755					HG 21, 6 of which imm.
1808	BLIS	1	ce		Following Fann
1810					Sunset close observation

SI-MNH-958-e
 Rev. 5-66



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

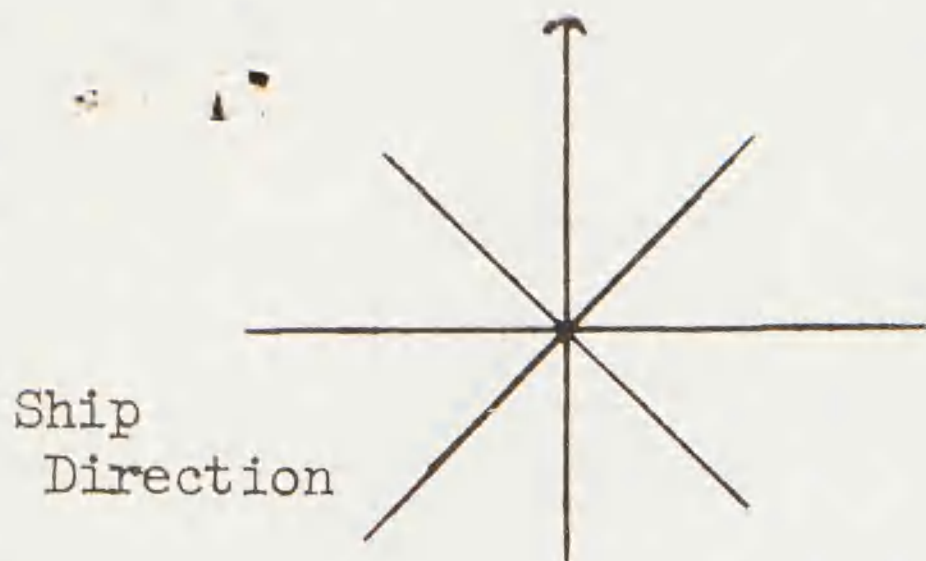
OBSERVERS:

Date 26 Feb 67
Pg.# _____

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

2100					begin obs.
2110	Gull	1			
2132	"	1			
2137	"	1			
2255	HG	1			following - ad
2300					cease obs.



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

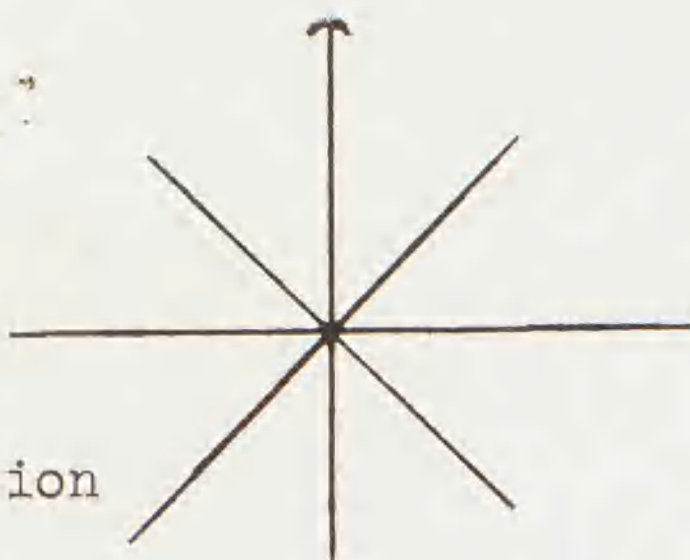
Date 27 Feb 67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0635				sunrise begin observations
	0646	HG	7	ce	6 ad, 1 imm
		BFA	1	ce	Following ship
	0710	BFA	2	ce	
	0712	Taigr sp.	1	SW	Following
	0755	BLK	1	Q	ad
	0810	GWG	1	Follow	imm
J	0850	HG	7		now 12 ads, 1 imm.
	0901	BLK	1	E	
	0902	"	1	ce	ad
	0910				change course to S.
FF	0915	BLK	8		7 imm, 1 ad
		Pom. Jaeg.	1		all over a small slick (ca 50' x 10')
	0922	BLK	2	ce	Chasing BLK's
	0929	BLK	2	ce	imm
	0937	BLK	1	E	1 ad, 1 imm
	0942	BLK	1	ce	imm
	0944	"	1	W	imm
	0952	"	1	ce	imm
	0955	HG	4		now 16 ad, plus 2 imm (total 20)
	0956	BLK	2	W	Imm
	0959	R. Phalarope	1	E	
J	1006	BLK	1	NW	Ad
	1028	"	1	SE	Ad
	1031	"	1	S	Ad
	1036	"	1	ce	Imm
	1040	"	3	ce	"
	1058	GWG	2	ce	Following Imm
	1120	10+			porpoise sp. spinner type - large white area in back region
JJ	1126	BLK	1	S	
	1140	"	1	ce	31-20 31-57 121-03
	1201	WRSP	1	ce	
JJ	1211	Fork-tail	1	ce	
	1215				HG noted picking on underside of small stick -
	1235	Gulls			19 ad HG, 4 imm, 2 imm GWG! Total 23 HG.
		BFA			still 2

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 27 Feb '67
Pg. # 2

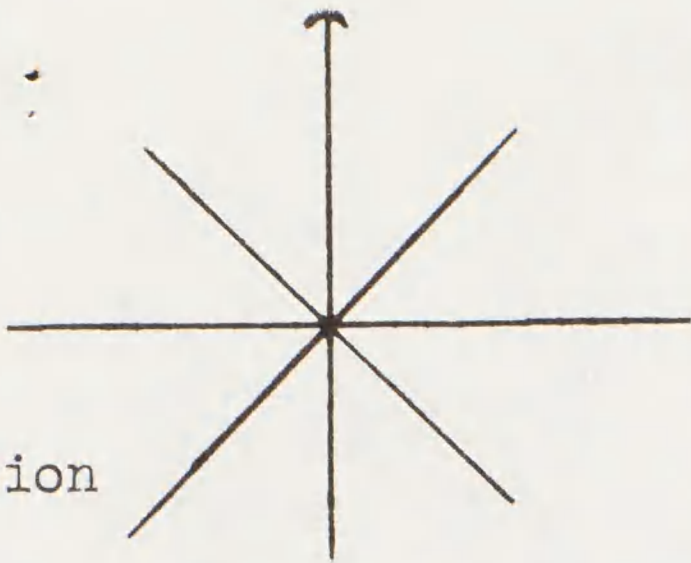
SPECIMEN

or

TIME SPECIES # DIR. BAND NO. REMARKS

	1240	BLK	1	NW	ad.
	1245	WRSP	1	SW	
	1256	BLK	1	SW	-Imm cc to W
J	1300				
J	1325	BLK	1	SW	own ship Ad shot but not retained
J	1408	"	1	SW	imm.
	1420	"	2	S	
	1425	GWG			"now 3 follow
	1500	BFA	1		NOW 3
	1507	BLK	1	W	imm
	1518	WRSP	1	SW	
	1524	"	1	SW	
	1530	GULLS			23 HG, 5 of which imm } following, feeding on offal
	1625	BFA	4	SW	3 imm GWG
	1650				Following ship
FF	1650	Tanager sp.	2		All gulls and albatross left ship and went to an area ca. 1 mile away where large fish (<4') were jumping. There was also a HIK. The 2 Tanagers were there also. One large unidentified bird also present - possibly a frigate, but not well seen.
	1650	Bird	1		
J	1704	R. Phal	4	SW	
J	1740	BFA			now 5 follow
	1805				cease follow

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

SPECIMEN

or

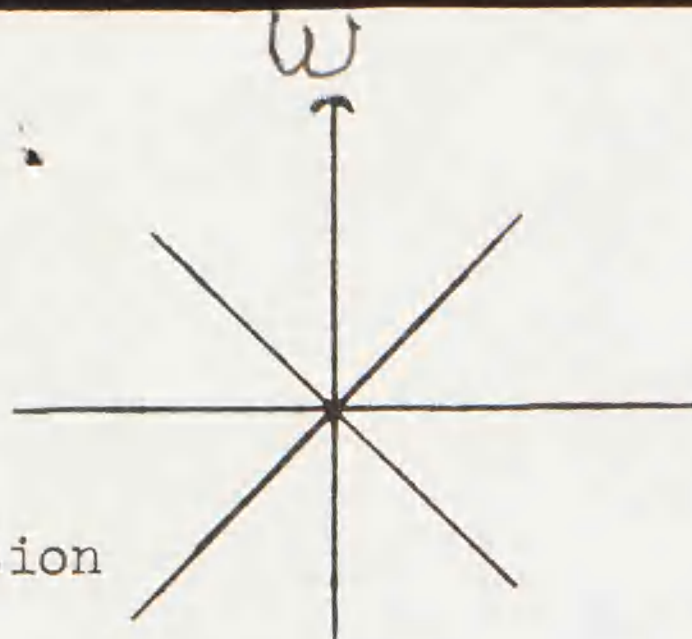
Noct. Bird.

OBSERVERS:

Date 27-28 Feb. '67
Pg. # _____

TIME SPECIES # DIR. BAND NO. REMARKS

2000					begin
2030					slow for B.T. - Lots of squid in H ₂ O. Small.
2125	URSP	1			
2135	Albatross	1			
2140	Bird	1			
2200					close



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

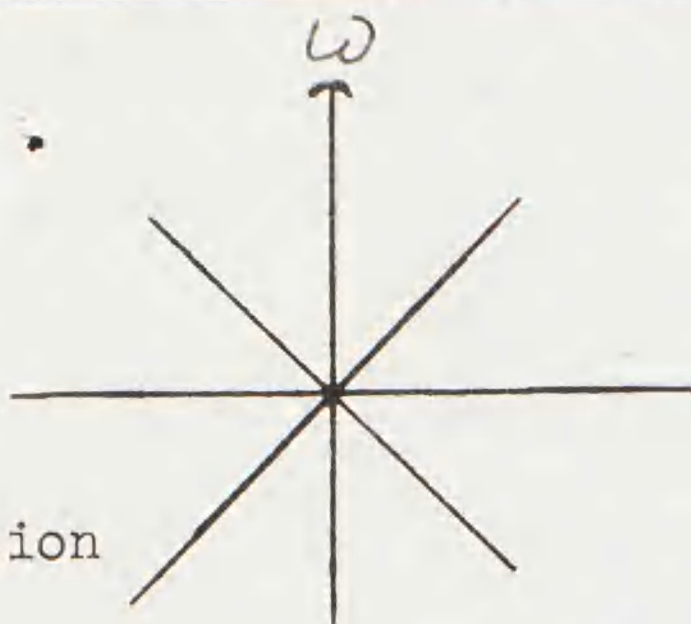
OBSERVERS:

Date 28 Feb 67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0645	HG	1	fallon	Regen obs. ad
	0650	WRSP	1	W	
	0702	"	1	W	
	0718	Lewy's S.P.	1	W	collected DLB
J	0735	"	1	W	9, Heavy Molt
	0740	BLK	1	on H ₂ O	imm.
	0752	BFA	1	W	Following ship
	0820				
	0822	WRSP	1	NW	Seal 31-45 124-49
J	0835	BLK	1	NW	Imm
F	0845	R. Pinkungr	8	W	Sitting on H ₂ O winter plumage
	0845	WRSP	1	W	
F	0856	WRSP	8	W	Sitting on H ₂ O
	0900	WRSP	1	W	
	0915	WRSP	3	W	
J	0906				For seal 31-44 124-56
	0908	Xantus	2		on H ₂ O
	0911	WRSP	1	W	
	0916	WRSP	1	W	
J	0917	GWG	1	W	imm.
	0930	WRSP	1	W	
	0930	HG			3 ad, 3 imm.
	0934	WRSP sp.	4	W	-distant
J	0935	Storm P. sp.	2		on H ₂ O, distant
J	0945	GWG	1		Now 2 imm.
J	0952	WRSP	2	W	
	1006				seal 31-43 125-06
	1009	WRSP	1	W	
	1015	HG			now 12 9 ad, 3 imm
S	1016	WRSP	1	W	
	1035	R. Phal.	4	on H ₂ O	2 coll: DLB Ad & Mod Molt Ad & No Molt
	1040	WRSP	2	W	
J	1100	"	3	on H ₂ O	
J		Lewy's SP	1	W	coll: DLB & No Molt
J	1123	Albatross sp.	1	S	white head, white leading edges of wings very distant Not going like Albatross because of wind.
J	1124	WRSP	1	W	
	1130	R. Phal	4	W	1 coll: Lewis & Moderate Molt sitting on H ₂ O
	1130	BFA			now 2 One in partial Breeding Plumage



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 28 Feb 67
Pg.# 2

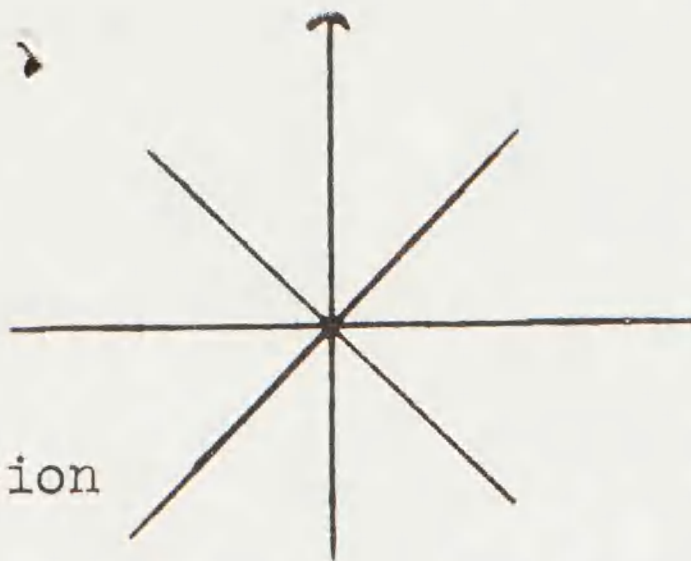
SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1206	WRSP	1			
1210	Alcid	1	NW		large
1230	BLK	1			imm sitting on H ₂ O preening.
1235	WRSP	1			
1259	RTTB	1			Not too close, but seen well enough to tell not a Red-bill. Flew up to ca 200' and started circling. Looked to be in ad. plumage. (BAH)
1425	WRSP	3	W		
1440	Xantus M.	2	NW		
1447	WRSP	1	W		
1507	WRSP	2			
1530	Gulls				5 ad Herr, 2 imm, 2 imm G W G
1530	BFA	1			Now 2 following.
1615	Bird sp	2	W		
1630			NE		10± whales - small size - slow roll
1640	WRSP	2			31-35 126-10 w/ black
1645					porpoise - 1 - spinner type - small
1655					18± porpoise - Baird's Dolphin 31-35
1710					Baird's Dolphin 30± 126 12 13 16
1732	WRSP	1	W		
1745	"	1	ce		
1745	WRSP	2	ce		porpoise 2 31-35 126-24
1800					cc to South
1800	F.T. Petrel	1	SW		
1810	H G	10	ce		1 Imm
	G W G	1	ce		Imm } all following ship
	BFA	4	ce		
1812	WRSP	2	ce		
1818	"	1	ce		
1822					Sunset close observations

BLK ad 0
imm 3

HG Ad 11
imm 11

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

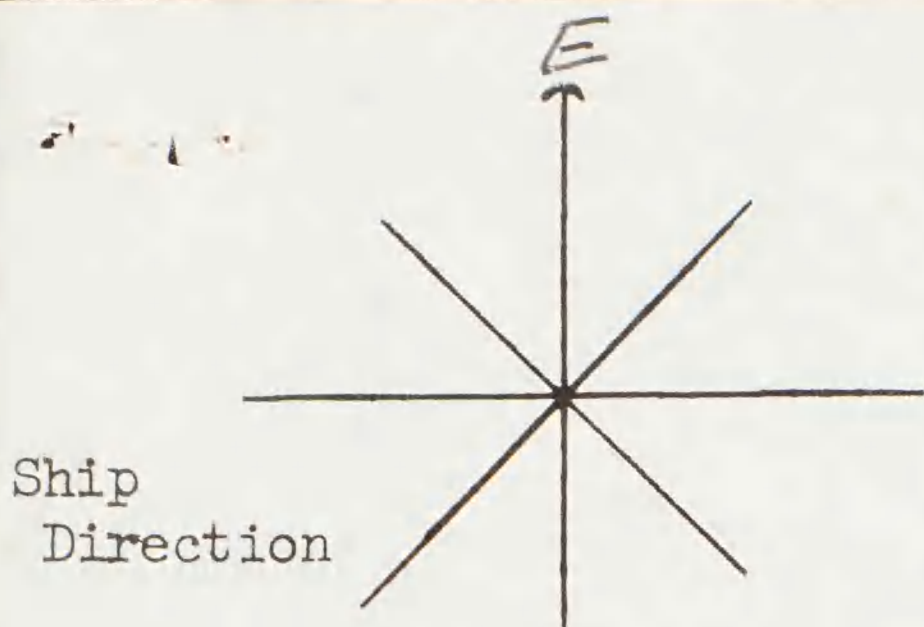
SPECIMEN *Nocturnal Grid*
or

OBSERVERS:

Date *28 Feb 67*
Pg. # *1*

TIME SPECIES # DIR. BAND NO. REMARKS

2100					Begin observations
2130					
2210	Storm Pet	1			cc to E
2228	BTTB	1	cc		Stopped to pick up fish ball
2240	R. Phalarope	1			Sitting out to U observed closely by
2315					Lewis & Harrington, flew very close to ship in light. close observations



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

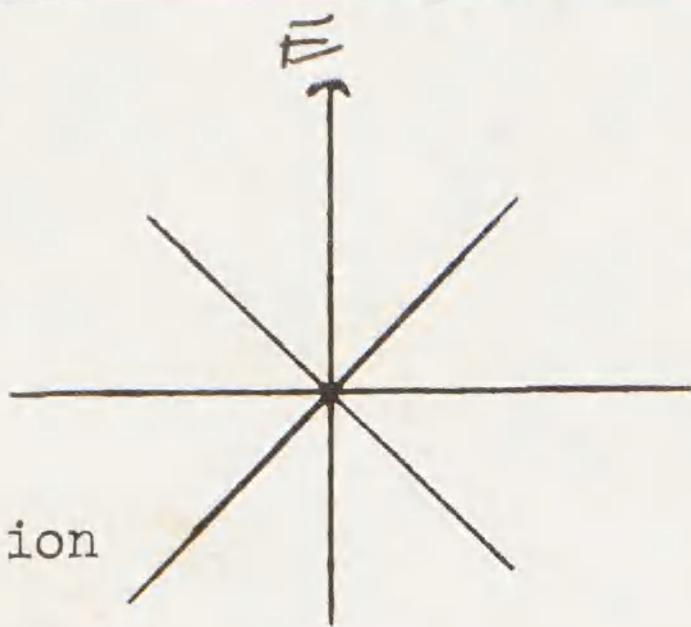
OBSERVERS:

Date 1 March 67
Pg. # 1

SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0655					begin
0656	BFA	2			Following
0702	"	2			4 "
0702	HG	1			ad
0725	WRSP	1	☉		
0734	HG	1			imm; now 1 ad, 1 imm
0755	WRSP	1	☉		
0805	R. Phal	1	E		
0806	BFA	1			now 3
0810	R. Phal	1	☉		
0810	BFA	1			now 4
0816	WRSP	2	☉		
J 0920	"	2	☉		
J 0952	R. Phalarope	3	☉		winter plumage
1002	HG	2			Now 2 ad, 2 imm.
1003	R. Phal.	1	E		winter plum.
1010	"	1	☉		
1015	"	2	E		
J 1040	HG				Now 4 ad, 2 imm.
1056	WRSP	1	E		
1112	R. Phal	2	E		
1137	WRSP	1	E		
1140	BFA	1			
J 1148	GWG	1			now 5 follows

BFA 4 ad IIII
1 imm IIII



Ship
Direction

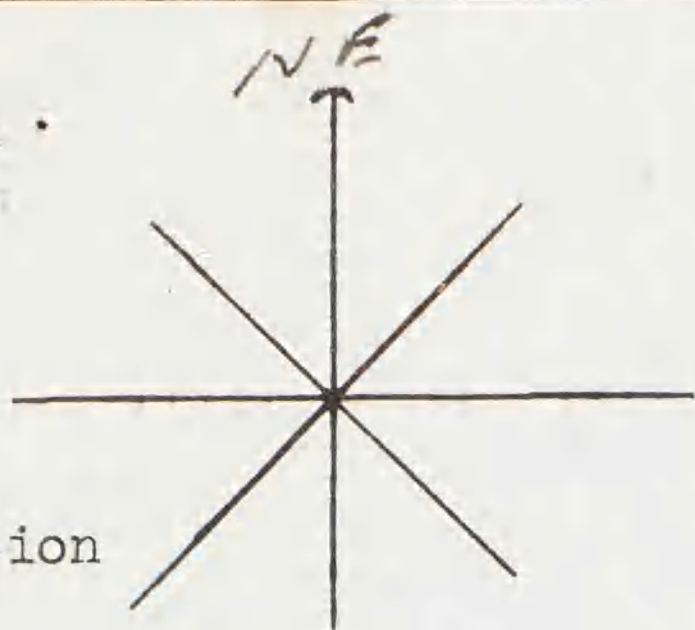
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 1 Mar '67
Pg. # 2

SPECIMEN
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1300	HG	6	ce		4 Imm 2nd } Following ship one has a band.
	BFA	3	ce		
1305	GWG	1	ce		
1325	Gulls				Imm Following
1355	RITB	1	ce		5 imm HG, 1 ad. 1 imm GWG.
1435					very high over ship, called once. Ad.
1520	GWG	2	ce		following HG 5 imm, 2 ad, 1 GWG
1543	Gulls				following
1555	GWG	3	ce		7 Imm 1 Ad HG, 2 Imm GWG Following
1630	BFA	4			following Imm
1635					following
1720					3 Imm GWG, 6 Imm HG, 2 ad HG.
1730	R. Phal	1	2		9 imm, 3 ad HG, 2 GWG (imm)
1802	St. Pats.	4	2		prob. WRSP



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

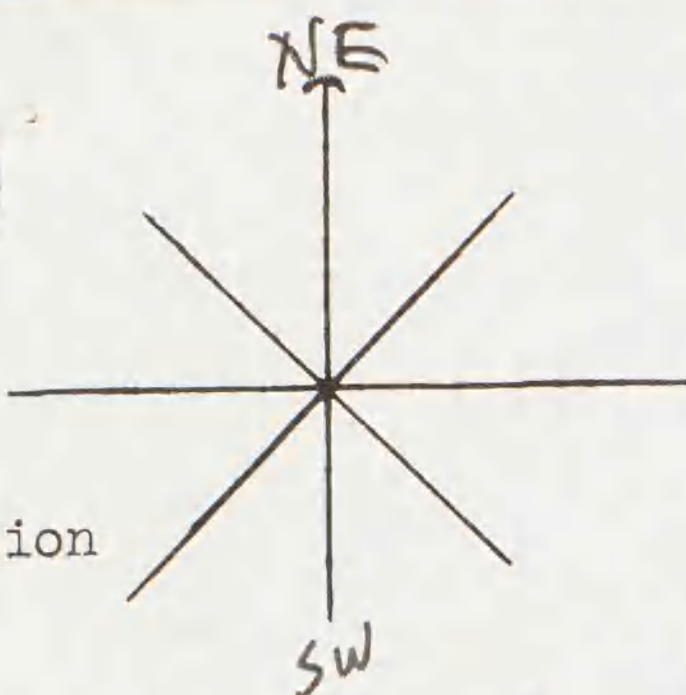
OBSERVERS:

Date 21 March 67
Pg. # 1

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

0628					Surprise / 100 in 1 second
0629	BFA	3	ce		Following
0640	HG	4	ce		" 2 Ad 2 Imm
0643	BLIS	4	NW		Imm
0644	"	2	N		"
0653	"	5	ce		Sitting on H ₂ O
0655	HG	10	ce		Following 6 Ad 4 Imm
0659	BLIS	1	ce		Imm
0701	"	1	N		"
0704	"	6	N		" Loose flocks
0710	HG	30+	ce		8 Imm Following
	BLIS	6	ce		Imm "
	BFA	3	ce		" "
	GWG	1	ce		Imm "
0715	BLK	1	ce		Ad
0718	BLK	2	NW		Imm
0721	"	4	N		"
0722	"	1	NW		"
0722	BFA	4	ce		Following
0725	BLK	3	ce		Imm
0727	"	6	ce		Imm 1 Ad
0730	"	1	N		Imm
0732	"	2	N		Imm
0734	"	4	N		Imm
0737	"	3	NW		Ad 2 Imm
0739	"	1	N		Imm
0742	Fulmar	1	ce		Imm
0742					Dead
0746	BFA	5	ce		Seal 31-58 120-21
0750	BLK	2	ce		Following
0751	"	15	ce		Imm
0752	"	3	S		on H ₂ O - Imm
0753	"	3	S		Imm
0754	"	3	S		Imm
0755	"	1	S		Imm
0756	"	2	S		ad.
0757	"	1	S		Imm
					ad.



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

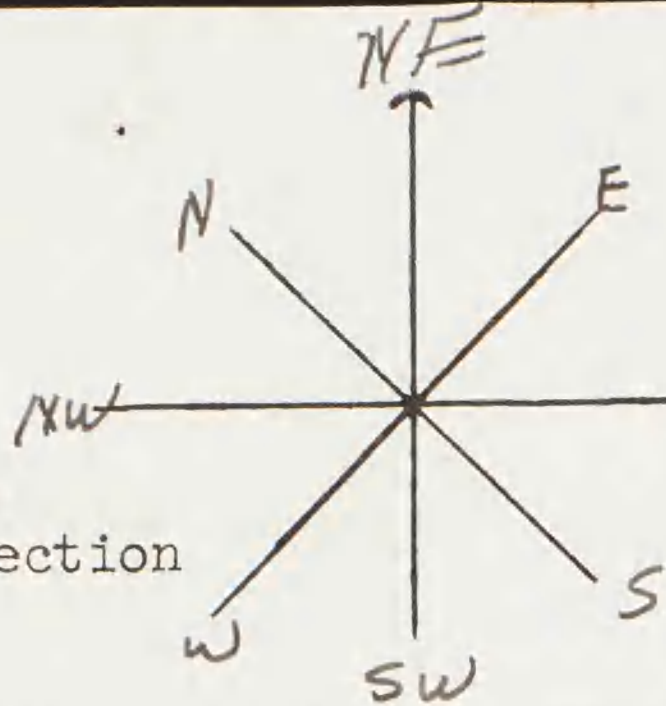
Date 2 March 67
Pg. # 2

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

0800	BLK	13	SW		imm
0803	"	1	SW		"
0812	"	1	2		"
0813	Sooty Shear	1	W		
0813	BLK	5	2		imm
0815	"	2	N		1 ad, 1 imm
0815	Fulmar	2	2		dark
0816	BLK	1	3		ad.
0819	R. Phal	1	2		
0820	BLK	1	SW		ad
0824	"	2	2		imm
0826	"	1	2		ad
0827	"	2	W		imm
0828	R. Phal	1	2		
0830	"	1	2		
0831	BLK	1	W		imm
0833	"	2	2		4
0834	"	1	2		
0835					"Seal - 32-02 120-13
0837	Fulmar	1	2		dark
0840	BLK	1	2		imm
0843	"	1	2		"
0849	Jaeger	1	2		
0851	R. Phal	1	2		
0852	BLK	1	SW		imm
0856	G. Gull	6			2 adults, 4 imm
0856	BLK	1			imm
0900					porpoise sp 6 32-04 120-10
0900					HG: 20, ca. 15 ad, 5 imm.
0901	Fulmar	1	2		dark
0905	BLK	1			imm
0905	Fulmar	1			dark
0910	BLK	1	5		imm

Ship
Direction



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

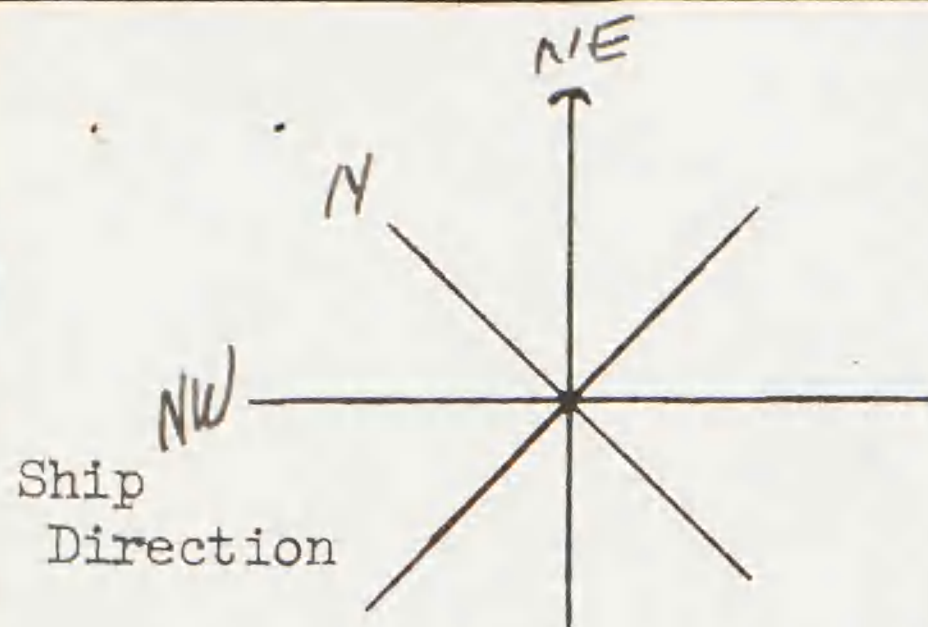
OBSERVERS:

Date 2 Mar '67
Pg. # 3

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

0910	BFA				Now 3
0914	Pale foot (Black)	1	⊙		
0915	F	1	⊙		Dark
0917	F	3	⊙		"
0918	BLK	3	⊙		Imm
0922	F	1	⊙		dark
0924	F	1	⊙		Interm.
0927	BLK	2	W		J
0930	BLK	2	⊙		1 Imm, 1 ad.
0930	Sooty S.	1	NF		
0930	F	1	⊙		dark
0931	F	4	⊙		dark
0931	Sooty Shear	1	⊙		
0932	BLK	1	S		U
0935	"	1	⊙		ad
0937	F	1	⊙		dark
0943	Pom. J.	2	N		both light
0945	BLK	8	NW		all Imm
0950	F	2	⊙		dark
0950	Sooty S.	1	S		
0952	Pom. J.	2	⊙		chasing BLK
	BLK	2	⊙		Imm
0952	F	1	⊙		dark
0952	F	1	⊙		light
0952	BLK	1	⊙		ad
1000					
1002	BLIS	3	N		seal 3 32-09 120-02
1004	Fulmar	1	⊙		Imm
1004					light
1007	BLIS	2	⊙		seal 1 32-09 - 120-02
1010	"	4	N		Imm
1015	BLIS	100±25			Imm
	Sooty Shear	4			All Imm 2 sitting on H ₂ O Near log
	Gulls				1 shearwater collected 4 J
1045	Fulmar	1	⊙		Joined By Gulls from ship (lost 100±150 20 Gulls)
1050	"	1	⊙		light
1053	Shearwater	1	⊙		"
	Fulmar	1	⊙		disturb
1054	BLIS	5	⊙		Imm
1104	Sooty Shear	1	⊙		Imm
1105	BLIS	1	SW		Imm
1106	Small Alcid	1	⊙		Sitting on H ₂ O



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

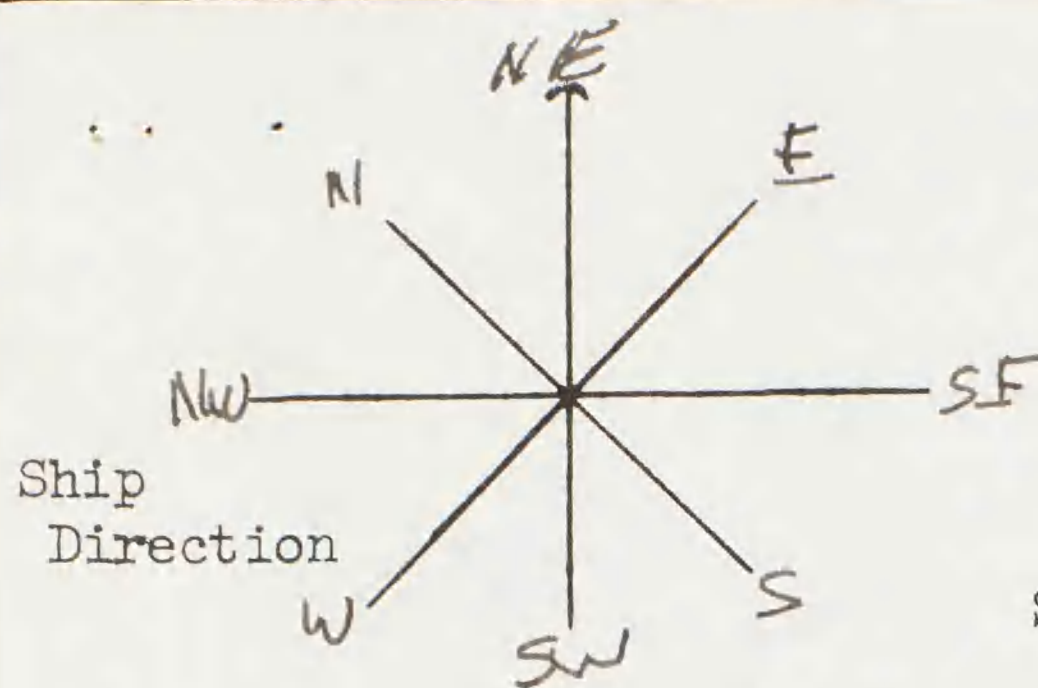
Date 2 March 67
Pg. # 4

SPECIMEN

or

TIME SPECIES # DIR. BAND NO. REMARKS

JJ	1109	Fulmar	1	ce	—	sitting on H ₂ O light		
	1111	BLK	2	Q	—	imm		
	1115	"	1	Q	—	ad		
	1120	Fulmar	2	Q	—	dark		
	1122	BLK	3	Q	—	imm		
	1125	Fulmar	2	Q	—	dark		
FF	1126	Gulls Sp	15	on H ₂ O	Q			
	1130	Fulmar	1	Q	—	dark		
	1130	BLK	1	Q	—	imm		
	1132	"	1	S	—	"		
	1135					1 cal. Sea lion	32-17	119-49
	1136					2 seals		
	1140	BLK	1	Q	—	imm	32-17	119-49
	1141	"	1	Q	—	"		
	1143	"	1	Q	—	"		
	1144	Fulmar	1	Q	—	dark		
	1145					1 seal	32-18	119-48
	1146					1 seal	"	"
	1149	Fulmar	1	Q	—	dark		
	1150	BLK	1	Q	—			
	1152	Fulmar	1	—	—	dark		
	1156	BLK	1	Q	—	imm		
	1157					8 Baird pop, 2 striped	32-19	119-46
	1158	Ful.	2			dark, one on H ₂ O.		
	1201	S. Shear	1	Q	—			
	1205	BLK	3	NW	—	imm		
	1207	"	1	"	—	ad		
	1210					Dall Porpoise 6 - rode bow for 5 min.		
	1215	BLK	3	NW	—	imm	32-20	119-45
	1216	"	1	NW	—	ad.		
	1220	"	1	NW	—	imm		
	1221	R Auklet	2			on H ₂ O		
	1222					cal sea lion	32-21	119-43
	1223	BLK	3	NW	—	imm		
	1227	BLK	5	Q	—	imm		
	1227					Steller sea lion ♂ (huge)	32-22	119-20



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

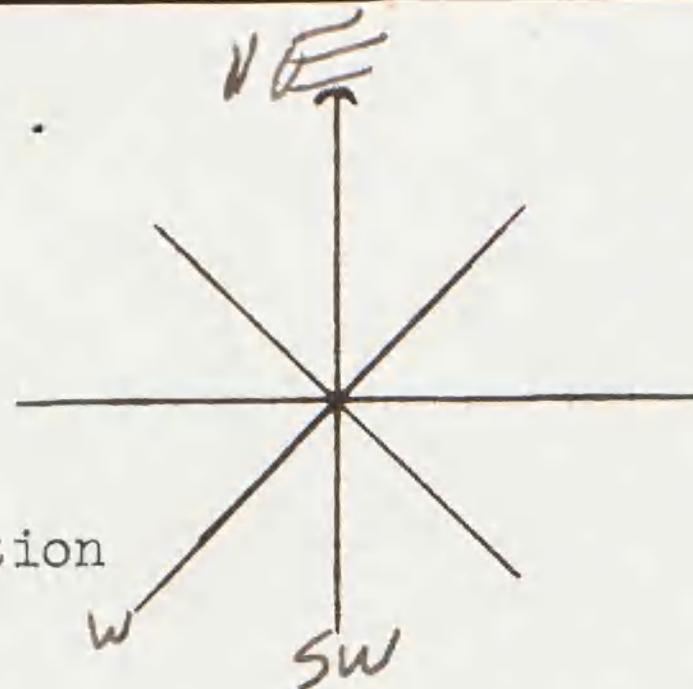
SPECIMEN
or

OBSERVERS:

Date 2 Mar. '67
Pg. # 5

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
	1229	BLK	1	N		imm.
	1231	BLK	2	⊙		ad, imm
	1235					Dall Porpoise 8 - 32-22 119-41
	"	BLK	1	⊙		
FF	1240	"	14			Imm all imm. Cal. Sea L.
	1241	Pom. Jaeg	1	N		Light. 32-23 119-40
SF	1245	BLK	17	⊙		15 imm, 2 Ad
	1245					2 more dall porp. joined 8 still riding bow
	1247					School dall porpoise - ca. 50±10 + 10 th here. 32-24 119-39
	1250	BLK	50	⊙		Another school ^{dall} ca 25. Field mark: high splash when they break surface.
	1253	Pom J	3			light, chasing BLK
	1256					
	1258	BLK	2	NW		Seal 32-25 119-38
F	1258	"	21			ad, Imm
	1300	BLK	3			All imm, on H ₂ O.
	1300	Jaeg. sp	1			feed., J. chasing BLK
	1300	Ful.	1			
	1302					dark still 3 of above 10 Dall riding wake.
	1310	BLIS	4	SW		Imm {largest one ca. 8'±6"
	1310	Ful.	1			dark {smallest " ca 6'±6"
	1311	BLK	1	S		imm
	1315	"	1	W		"
	1316	"	2	⊙		ad, imm
	1318	"	1	NW		imm
	1320	"	1	NW		ad
	1321	"	10			all imm, on H ₂ O
	1324	Pom. J	1			on H ₂ O
FF	1326	BLK	35			U
	1326	Pom. J.	2			chasing BLK
	1326	CA	1			
	1327	Ful.	1	⊙		dark
	1330	BLK	2			ad
FF	1330	"	15			feeding
F	1330	BLK	35			on H ₂ O 32-28 119-33
						seal 2
FF	1332	BLK	14			13 imm, 1 ad FF
SF	1334	"	55-110			
		Jaeg sp	3			chasing

Ship
Direction

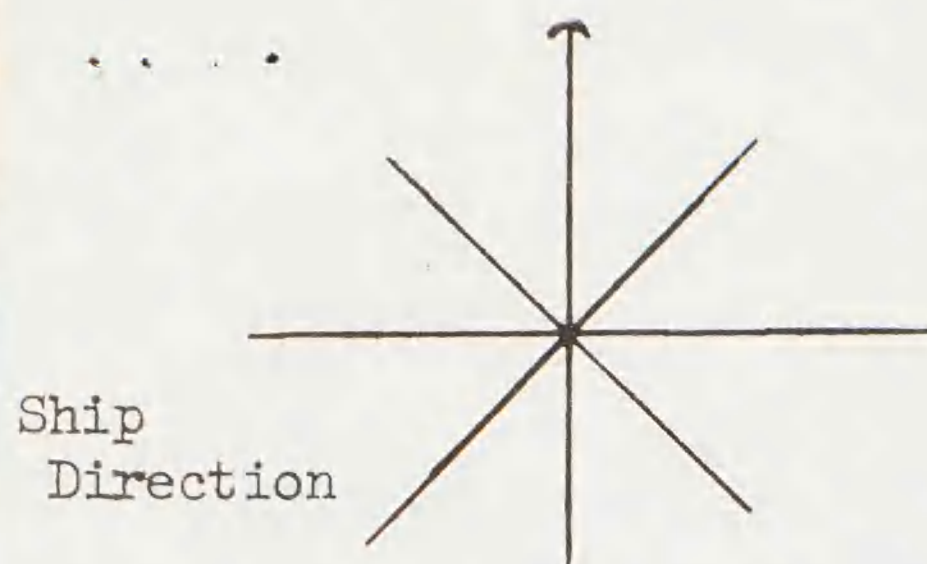


SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 2 Mar '67
Pg. # 6

	TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
FF	1335	BLK Pom. J	15 2			Imm, 2 ad light, chasing
F	1340	BLK Pom J.	30 1			on H ₂ O
F	1340	BLK	25			on H ₂ O
FF	1341	BLK	9			all imm
	1342	Scaup	1			Long tail or parasitic
F	1344	BLK	18			all ADULTS.
F	1350	BLK seals	30			28 imm, 2 Ad
F	1350	BLK	20			30, 17 imm. 2 32-30 119-29
F	1350	BLK	30			imm
F	1358	" R. Phalarope	80 } 1 }			Imm 3 Ad on H ₂ O
F	1400	BLK	5			2 Ad
F	1401	"	30			Mostly Imm
F	1401	"	20			" "
	1404	"	1			Ad on H ₂ O
	1405	Fulmar	1	N		Dark
J	1407	BLIS	1	SW		Ad
	1408	BLIS	1	SW		Seal 1 32-32 119-27
	1409					Imm
	1410	BLIS	2	SW		Seal 4
	1412	R. Phalarope	1	cen		Ad to Imm
	1414	BLIS	10	cen		on H ₂ O winter plumage
	1415	"	8	cen		on H ₂ O Distat
	1418	BLIS	100 ± 20			4 on H ₂ O 6 overhead in Air
		Pom J.	6			on H ₂ O
	1424	BLIS	12	cen		All Light & chasing BLK
	1426	"	25			on H ₂ O Distat
	1428	Pom J.	2	N		light Ad "
	1429	BLIS	24			on H ₂ O Imm 32-35
	1430	"	11			2 Ad on H ₂ O 119-24
	1432	BLIS Gulls	30 ± 5 4			Seal 3 Bulls & BLU feeding over seal - 32-35
J	1436	Gulls	14			Ad on H ₂ O 119-23
J	1436	"				Seal



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

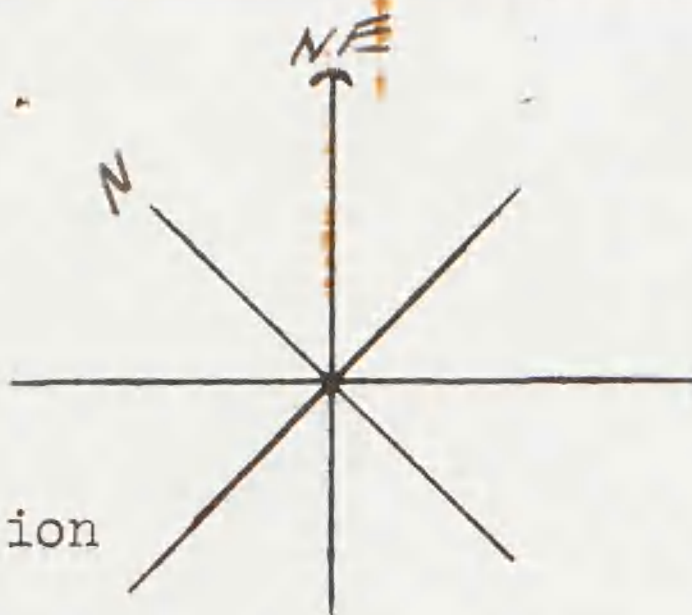
OBSERVERS:

Date 2 March 1967
Pg.# 3 7

SPECIMEN
or

TIME SPECIES # DIR. BAND NO. REMARKS

	1439					Fur Seals 2	32-36 119-22
F	1440	BLK	4	ae		1 Ad 3 Imm	
		Pom J.	1	ae		Darv's Ad	
	1443	Porpoise				10± Jumping distant	32-37 119-22
	1445	BLK	3	N		Imm	
	1445	Gull sp	2	ae		Ad Imm	
	1503	Alcid	1	ae		on the D	
	1504	BLK	1	ae		ad	
	1512	"	1	ae		"	
	1516	"	4	S		imm	
	1517	"	1	S		ad.	
	1520	Rhino	2	on H ₂ O			
	1526	"	2	" "			
	1530	Shearwater?	1	ae			
	1536	BLK	1	ae	imm		
	1535	Rhino	1	on H ₂ O			
	1542	"	1	ae			
	1543	BLK	1	ae	imm		
	1545	"	1	"	q		
	1547	BLK	2	ae	imm		
		Jaeger	1			harassing BLKs	
	1550	Rhino	1	on H ₂ O			
	1554	"	1	N			
	1555	W. Gull	2	sitting on board			
	1601	"	1	following			
	1604	BLK	1	S	imm		
	1607	RA	5			on H ₂ O	
	1608	Jaeger. 2P	1				
	1608	Ful	1			dark	
	1614	BLK	3			imm	
		Pom J.	1			chasing, light phase.	
	1619	BLK	1	SW		imm	



Ship
Direction

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

OBSERVERS:

Date 2 March '87
Pg. # 8

SPECIMEN

or

TIME SPECIES # DIR. BAND NO. REMARKS

	1620	Alcids	4	N	large	
	1620	BLK	2	NE	imm	
	1625	"	1	NE	imm	
	1627	"	1	N	"	
	1629	R. Phalarope	1	NE	calling	
	1629	BLK	1	NE	imm	
	1630					
	1631				2 striped dolphin.	} 12 32-48 119-05
	1632				2 more	
	1635	BLK	3		8 more	
F	1637	BLK	7		1 ad, 2 imm	
		Soot. Shear	2		imm	
		Pink-foot "	2			
	1640				18 striped dolphin now	32-50
F	1645	BLK	8		on H ₂ O	119-03
					Small seals 3	32-50
	1647	Pom. Jaeg	4			119-02
	1648	BLK	5		imm	
					Cal. Sea Lion 3	32-51 119-02
	1648	Large Alcids	1	NE		
	1656	Pom Jaegon	1	N		
	1657	R. Phalarope	1	ce	Colled	
	1700	BLK	3	SW	Ad	
	1706	Fulmar	1	ce	Dark	
	1709	R. Phalarope	1	ce	Seal 1	32-53 118-59
					winter plumage calling	
	1711	Rhino	1			
	1725	Long Alcids	3	N		
J	1726	Rhino	1	ce	} on H ₂ O	
		BLK	3			
		Gull sp	1		Imm	
J	1732	Rhino	4	ce	on H ₂ O	
	1735	"	2	ce	" " "	
	1736	Pom Jaegon	2	ce	" " Ad light	
	1738	Rhino	2	m	" " "	
	1743	Pom J.	2			
	1744				Dark	
	1748	G W G	1		Striped + Banded Dolphin	25+ 32-56 118-53
	1753	Gull	53		Imm following	
		BLK	1	N	Following	
					Imm	
	1753				Swampy observation	

PRELIMINARY REPORT ON
EASTERN AREA CRUISE NO. 4

including

EASTERN GRID SURVEY NO. 3

Prepared by
Brian Harrington (Grid Section)
and
David Burckhalter (Non-grid Section)

EASTERN AREA CRUISE NUMBER FOUR

This report is a summary of observations and collections made by P.O.B.S.P. personnel in the eastern Pacific Ocean from 21 February until 02 March, 1967. Participating personnel included Brian Harrington (biologist-in-charge), David Burckhalter, and James Lewis. Superior cooperation was again received from the officers and crew of the U.S.N.S. SHEARWATER (T-AG 177). The grid track (see map 1) was followed accurately. Hourly LORAN or sun-line fixes insured that all diurnal positions were reliable within five miles, and dead reckoning of positions during nocturnal hours are probably accurate within ten miles.

This report is divided into two sections: the first deals with the eastern grid survey while the second summarizes the non-grid portion of the cruise.

Eastern Pacific Grid Survey No.3

The eastern grid survey was conducted from 0745 hours 22 February until 0310 hours 02 March, 1967. A total of 89.0 hours of diurnal observations was conducted over 849 linear miles. Diurnal grid observations are summarized in table 1. In addition 14.4 hours of nocturnal observations were conducted and are summarized in table 5.

Weather data during this survey were recorded on appropriate forms and ADP sheets. In general, light winds and seas predominated. This probably favors a larger number of bird and mammal sightings than would have been recorded were conditions similar to that of the last two cruises. However, no allowance has been made in any of the tables or species discussions as the effect of varying conditions was not determined.

Flocking activity was again low, but a few instances are worth mention. First, an area of concentrations of Fulmar mentioned in the last two reports was crossed again during this cruise. This time, however, the birds were much more spread out. While the total for the day is about the same as on the last two cruises, the birds were noted over three times as large an area. As before,

this concentration is not considered a flock, but an area of concentration. Flocking of other species was noted rarely. Inactive groups of storm petrels or phalaropes were occasionally seen sitting on the water. Feeding flocks were noted only twice. The first (on 27 February) was composed of eight Black-legged Kittiwakes and a Pomarine Jaeger feeding over a natural slick about ten by fifty feet long. On the same day another flock composed of Gulls and Albatross which had been following the ship formed briefly over a group of feeding fish. A small slick formed at the same time. This flock dispersed in less than five minutes.

Collecting during this survey was reduced from the last primarily because the outboard motor broke down. Fourteen specimens were shot from which eight blood sera samples were obtained (see table 1.)

For purposes of discussion the grid has been divided from both north to south (see table 2) and from east to west (see table 3). These divisions are shown on map 2.

Bathythermographs were taken on 39 localities within the grid on this cruise.

Grid Species Accounts

Black-footed Albatross (Diomedea nigripes) 34

Highest densities were recorded in the central and southern sections of the grid with fairly even distribution from east to west. The distribution more closely approximates that of January as opposed to early February, probably due to differences in areas sampled during daylight hours. Two birds with bands were seen.

Fulmar (Fulmaris glacialis) 83

Density was again highest in the northeast section of the grid with over sixty percent of the sightings being recorded in an area near point "D". The

dispersion of this group (see above) taken in account with the fact that no birds were seen in the central and southern portions of the grid suggests the possibility that some distribution change may be underway. On the other hand, the east-west distribution remains virtually unchanged from last month.

One dark phase bird was collected. There appeared no advance of gonad breeding condition compared to specimens from earlier cruises.

Fork-tailed Petrel (Oceanodroma furcata) 17

The increase over last month is probably due to differences in areas sampled. Compared to January, there appears to have been a density shift from the central to the northern section of the grid.

Leach's Storm Petrel (Oceanodroma leucorhoa) 90 +2 nocturnal

The higher number observed over last cruise is probably due to the better observation conditions during this cruise. North-south density-distribution remains virtually unchanged, while east-west distribution would appear to have reversed since last cruise. This is probably as a result in differences of areas surveyed during daylight and also due to weather variations.

Two specimens were collected; neither showed advanced gonad condition.

In addition to 90 Leach's, most of the 19 birds identified only as storm petrel species were probably Leach's.

Red-tailed Tropicbird (Phaethon rubricauda) 2 +1 nocturnal

All three birds were in adult plumage, and all were single sightings. These records, combined with those of last cruise, would suggest that the grid area is included in the normal range for this species despite its formerly unrecorded presence in this part of the pacific.

All three sightings were in the southern third of the grid. None were collected.

Red Phalarope (Phalaropus fulicarius) 73 + 1 nocturnal

The number of birds sighted is virtually the same as on the last cruise. However, density from area to area was considerably different, with a marked shift from east to west. The writer feels that this is not accounted by differences in observation, but reflects some movement.

Four specimens (all females) were collected; ovaries were slightly enlarged, but all ova were minute. One specimen had a few red feathers coming in on the belly, while the others were in molt but did not have any red feathers. All were in fat condition.

It seems quite significant that to date every phalarope collected (total of 10) in the eastern grid has been a female. More collecting on the next survey will be conducted to see if this trend continues.

Pomarine Jaeger	(<u>Stercorarius pomarinus</u>)	12
Jaeger Sp.	(Unidentified)	11

A noticeable increase in the numbers of Jaegers is not explained. Distribution was limited to the eastern half of the grid, with most birds being in the north section. Some were noted chasing kittiwakes, and all sightings were of single birds.

Glaucous-winged Gull (Larus glaucescens) 16

Numbers and distribution remain essentially unchanged since the last two cruises; the slight increase from north to south does not seem significant. As in past cruises, all grid sightings were of immature birds.

Herring Gull (Larus argentatus) 190

Distribution was again uneven. Density was virtually the same in the northern two thirds of the grid, while the southern third was less populated. East-west distribution also varied with a higher density being recorded in the eastern half.

Age distribution was again interesting. In the northern third,

adults comprised 90 percent (N=91) of the Herring Gulls as opposed to 80 percent (N=77) in the central third, and 65 percent (N=56) in the southern third. East-west age distribution did not vary as much as north-south. In the eastern half 81 percent (N=145) of the Herring Gulls were adults, while in the west 76 percent (N=91) were adults. The difference may or may not be significant.

Breeding condition of three adult females collected suggested slight gonad development; the largest ova found were 2.5mm in diameter, but most were closer to 2mm. Fat condition varied from light on one bird to moderate on two.

Black-legged Kittiwake (Rissa tridactyla) 189

The number seen is close to that seen during the last survey. Density distribution also approximates that found on the last cruise, i.e., a decline from north to south and from east to west.

Age distribution was also variable. In the north section adults comprised 67 percent (N=104), in the central section 23 percent (N=43), and in the south 25 percent (N=16). East-west age distribution was more nearly even with adults comprising 54 percent (N=126) and 43 percent (N=40) respectively.

Xantus Murrelet (Endomychura hypoleuca) 7

Sightings were recorded in all three sections of the grid; most were in the western half. Three of the observations were of two birds together.

Rhinoceros Auklet (Cerorhinca monocerata) 19

All but one bird were seen in the north section of the grid, and all but two were in the eastern half. Both the numbers and the distribution are similar to that found on the two previous cruises.

Tufted Puffin (Lunda cirrhata) 1

One bird believed to have been this species was seen in the north section.

Horned Puffin (Fratercula corniculata) 4

All sightings were in the north section of the grid. One bird which was collected had moderate to heavy body and flight-feather molt.

GRID MAMMALS

Seals

Seals were again most abundant in the north section of the grid where 25 probable Northern Fur Seals were noted. One seal was also seen in the central portion, and three were in the south section. Two of the latter were believed to have been Northern Fur Seals, but this was south of their normal range and as the observer was not well versed in identification, the recording may be in error.

Porpoise sp.

Porpoise were most abundant in the central and south (21 and 48 respectively) sections of the grid. The observers were not familiar with field marks, but Baird's Porpoise were positively identified. One or more additional species were not identified.

Whales.

Six unidentified whales were seen in the north section, and ten in one group were noted in the south. No specific identifications were made.

Non-grid Observations

The Non-grid pelagic observations were made while proceeding to (northern section) and returning from (southern section) the Eastern Grid, using Long Beach as the port of operations. For the days of Feb. 21-22 observations were carried on for 7.8 hours over a distance of 77 linear miles. On March 2 sightings were conducted for 11.3 hours over a distance of 115 linear miles. A total of 19.1 day light hours of observation was conducted over 192 linear miles (see map). All non-grid bird observations are summarized in Table 7.

Schedule

	time	distance	begin observations	cease observations
Feb. 21	6.5 hrs.	64 mi.	1115 Pt. Fermin	1744 34°09'N 119°24'W
Feb. 22	1.3 hrs.	13 mi.	0625 34°54'N 121°44'W	0748 34°59'N 121°59'W
Mar. 2	11.3 hrs.	115 mi.	0628 31°51'N 120°32'W	1753 32°57'N 118°50'W

In general the activity of birds in the northern section appeared to be of single birds engaged in feeding, resting, or travelling. Only six flocks were observed and these were close to shore. In contrast the birds in the southern section were largely concentrated in flocks (46), mostly sitting or feeding. The number of birds in the two sections also differs greatly and this would be due to the attraction of a large food source for the birds in the southern section.

	n. section		s. section
	Feb. 21	Feb. 22	Mar. 2
no. birds	523	37	1298
no. flocks	6	0	46

Non-grid Species Accounts

Black-footed Albatross

Black-foots were not sighted en route to the grid, most likely because the ship was in the Santa Barbara Channel and quite near land until reaching the grid. This may be explained in that the Black-foot appears to frequent shore lines uncommonly. Black-foots (5) followed after the ship left the grid until observations were closed; at this time we were 30 miles from land.

Shearwater/Petrels

Smaller procellariiforms were absent from the northern section except for one sighting of a Fulmar. In the southern section, on the other hand, Sooty Shearwaters (12) and Fulmars (40-9:1 ratio, dark phase) were abundant. These birds were sighted in an area heavily concentrated with flocks of Kittiwake gulls, indicating that food was readily available. One Sooty was collected and found to be gorged on small fish. Also recorded in the southern section were 2 Pale-foot Shearwaters, 1 Pink-foot Shearwater, and 2 Shearwater/Petrels. No Storm Petrels were sighted in either non-grid portion.

Cormorants and Pelicans

Cormorants (12), probably Double-crested, were commonly seen feeding in the northern section in the Santa Barbara Channel. No Cormorants were sighted in the southern section due to our distance from land. Surprisingly no Brown Pelicans were observed; in the previous cruises they were commonly seen in association with feeding gulls in off-shore waters.

Black Brants and Ducks

Two groups of Black Brant (12 and 4), probably migrating, were sighted in the Santa Barbara Channel sitting on the water. These birds represent the first Black Brants observed in three cruises. Also two birds were recorded as Duck sp.

Jaegers

(41)

Jaegers were also quite abundant in the southern section of the non-grid, specifically in the area with large concentrations of Kittiwakes and other feeding birds. They were frequently observed harrassing the Kittiwakes and were often successful in causing a regurgitation. Thirty-three were recorded as Pomarine and 8 as Jaeger sp. Since light conditions made identification difficult, it is probable that Parasitic Jaegers were also present though none were positively identified. Only one Jaeger was sighted in the northern section.

Red Phalarope

Red Phalaropes (9) appeared to be well-scattered over the southern section where observations were made. These were our first non-grid records, but probably because we were so far from land and had not made a day survey in this specific area. Each bird was observed singly, one being in a flock of Kittiwakes. None were seen in the northern section.

Gulls

During the first day of non-grid observations, as we passed through the Santa Barbara Channel, no Herring Gulls were identified. The next day, as the grid track was neared and we were distant from land, Herring Gulls (16) were following the ship. It appears that the Herring Gull is being out-competed near land as indicated by the large numbers of other gulls. In the Eastern Pacific it seems to be a pelagic gull. Judging from the previous cruises and this one, the Herring Gull commonly follows at sea but decreases in number as land nears and other gulls appear. In the southern section the Herring Gull (31) was common but land was distant and only a few other kinds of gulls were sighted (i.e., California, Western, Ring-billed). Adults outnumbered immatures 4:1 in the north, 15:1 in the south. In the northern section California (30),

Western (9), Ring-billed (16), Heerman's (1), Bonaparte's (1), Glaucous-winged (1), and Black-legged Kittiwake Gulls were recorded, many following from time to time. The age composition of these gulls is unknown except for the Kittiwakes (4:1 adults). One flock of Ring-billed and one of California Gulls was observed, otherwise gulls were scattered except for 4 large flocks (50-200) of Gull sp. distantly seen along the shore line. These were probably mixed compositions of California, Western, and Ring-billed Gulls.

In the southern section great differences occurred in comparison with the northern section, primarily concerning the numbers, age composition, and activity of the Black-legged Kittiwakes. From sunrise until sunset Kittiwakes were dense, mainly sitting and feeding flocks. Altogether 40 flocks were sighted. Such a large concentration of Kittiwakes (1109) along with other birds indicates a prime area of feeding. One might assume migration a possible explanation for such a congregation, but when one takes into account the 9:1 ratio of immatures to adults, a prolific food source can be the only reason for this aggregation. The following numbers of Kittiwakes were logged: 544 immatures, 67 adults, and 498 of unknown age. It is interesting to note that among the predominant flocks of immatures, one totally adult flock of 30 was recorded. Other gulls in the southern section were Glaucous-winged (1), California (6), and Western Gulls (3). The California Gulls (one flock) were observed 90 miles and the Western Gulls 30 miles southwest of San Clemente Is.

Alcids

Three Ancient Murrelets represent the only alcids sighted in the northern section. In the southern section, on the other hand, alcids were common. Twenty-six were identified as Rhinoceros Auklets while 10 were logged as Alcid sp. All were on the water indicating that they were feeding or had been doing so. One flock of 5 Rhinoceros Auklets was observed.

Non-grid Mammals

Mammals were numerous in both non-grid sections. In the Santa Barbara Channel whales and porpoise appeared to be common, yet no seals were sighted. Two separate recordings of the Gray Whale were made along with one sighting of a pod of Pilot Whales, and three separate observations of porpoise schools: one of Striped Porpoise, one of Baird's Porpoise, and one a mixture of the previous two. Along the southern non-grid section mammals were more diverse and abundant than in the northern section. Apparently the same food source that attracted so many birds also accounted for the presence of large numbers of seals and porpoise. Thirty-six Otariids were recorded: 28 Seals (probably Fur Seals), 7 California Sea Lions, and 1 Stellar's Sea Lion, most of them occurring singly. Porpoise were equally numerous as 11 schools of 181 individuals were logged: 5 schools of Dall Porpoise from 6-50 in number, 2 of Striped, 1 of Baird's, 1 a mixture of the previous two, and 2 of Porpoise sp.

Marine Mammal Sightings Outside Grid

<u>TOTALS:</u>		<u>North</u> <u>Leg</u>	<u>South</u> <u>Leg</u>
Whales: 15	Gray Whale	3	0
Otarids: 36	Pilot Whale	12	0
Porpoise: 213	Seal	0	28
	Calif. Sea Lion	0	1
	Stellar's Sea Lion	0	7
	Baird's Porpoise	24	19
	Dall Porpoise	0	104
	Striped Porpoise	15	31
	Porpoise (sp.?)	0	20
		<u>54</u>	<u>210</u>

Table 1: DIURNAL GRID SUMMARY, 22 FEB.-2 MARCH 1967. SMITHSONIAN EASTERN PACIFIC
GRID SURVEY NO. 3

[illegible]

TABLE 2: SECTIONAL BREAKDOWN OF EASTERN PACIFIC GRID BIRD POPULATIONS, FEBRUARY 22 - 2 MARCH, 1967

	NORTHERN THIRD				CENTRAL THIRD				SOUTHERN THIRD			
	No.	% of grid Species Total	% of Total birds in North Section	Birds/Sq. mile	No.	%	%	B/Sq. mi.	No.	%	%	B/Sq. mi.
Black-foot. Albatross	7	19.4	1.6	.006	15	41.8	8.3	.015	14	38.8	7.3	.012
Fulmar	83	100.0	18.5	.112								
Leach's Petrel	2	2.2	.4	.007	29	32.1	16.0	.118	59	65.7	30.6	.197
Fork-tailed Petrel	14	82.5	3.1	.046	1	5.9	.6	.004	2	11.8	1.0	.007
Red-tailed Tropicbird	0				0				2	100.0	1.0	.003
Glaucous-winged Gull	3	17.6	.7	.002	6	35.3	3.3	.012	8	47.1	4.1	.013
Herring Gull	92	43.8	20.4	.151	71	33.8	39.2	.145	47	22.4	24.4	.079
Black-leg Kittiwake	125	66.2	27.8	.205	46	24.4	25.4	.094	18	9.4	9.3	.030
Pomarine Jaeger	11	91.6	2.4	.018	1	8.4	.6	.002	0			
Rhinoceros Auklet	18	95.0	4.0	.118	1	5.0	.6	.008	0			
Xantus Murrelet	1	14.0	.2	.007	2	29.0	1.1	.016	4	57.0	2.1	.026
Tufted Puffin	1	100.0	.2	.007	0				0			
Horned Puffin	4	100.0	.9	.026	0				0			
Red Phalarope	35	48.0	7.8	.300	6	8.2	3.3	.049	32	43.8	16.6	.214
Bird sp.	17	85.0	3.8	.028	0				3	15.0	1.5	.005
Albatross sp.	0				0				1	100.0	.5	.001
Storm Petrel sp.	8	42.0	1.8	.026	1	5.3	.6	.004	10	52.7	5.2	.033
Jaeger sp.	8	72.7	1.8	.013	1	9.1	.6	.002	2	18.2	1.0	.003
Alcid sp.	21	91.0	4.7	.138	1	4.5	.6	.008	1	4.5	.5	.007
TOTALS:	450		100.1	1.200	181		99.5	.477	193		105.1	.630
Total miles:		304				245				300		

NOTE: The species totals for those types which follow the ship may not equal the total for the grid due to those which followed from one section to another.

TABLE 3: EAST-WEST SECTIONAL BREAKDOWN OF EASTERN PACIFIC GRID BIRD POPULATIONS, 12 FEB. - 2 MARCH, 1967

Species	EAST				WEST			
	No.	% of Grid Species Total	% of total birds in East Section	Birds / Sq. mile	No.	%	%	B / Sq. mi.
Black-foot. Albatross	19	42	3.9	.011	25	58	7.0	.015
Fulmar	78	94	15.9	.179	5	6	1.4	.006
Leach's Petrel	7	8	1.4	.016	83	92	23.4	.201
Fork-tailed Petrel	14	82	2.8	.032	3	18	.8	.007
Red-tailed Tropicbird	1	50	.2	.001	1	50	.3	.001
Glaucous-winged Gull	9	52	1.8	.011	8	48	2.3	.009
Herring Gull	137	62	27.8	.158	83	38	23.4	.101
Black-legged Kittiwake	142	77	28.9	.164	42	23	11.8	.058
Pomarine Jaeger	12	100	2.4	.014	0			
Rhinoceros Auklet	17	90	3.5	.079	2	10	.6	.008
Xantus Murrelet	1	15	.2	.004	6	85	1.7	.029
Tufted Puffin	1	100	.2	.004	0			
Horned Puffin	3	75	.6	.014	1	25	.3	.004
Red Phalarope	9	12	1.8	.042	64	88	18.0	.310
Bird sp.	3	15	.6	.004	17	85	4.8	.021
Albatross sp.	0				1	100	.3	.001
Storm Petrel sp.	7	37	1.4	.016	12	63	3.4	.029
Jaeger sp.	11	100	2.2	.013				
Alcid s p.	21	91	4.3	.098	2	9	.6	.008
TOTALS:	492		99.9	.860	355		100.1	.808
Total miles		435				414		

NOTE: The species totals for those types which follow the ship may not equal the total for the grid due those which followed from one section to another.

Table 4: Cruise data Summary, Eastern Pacific Cruise 4, 21 Feb.-2 Mar., 1967*

Date	21	22	23	24	25	26	27	28	01	02
No.hours diurnal observ.	7.5	11.5	11.1	11.0	11.3	11.2	11.5	11.6	11.1	11.4
No. miles sunrise-sunset	64	96	106	115	90	110	116	108	121	115
Total no. birds	476	200	111	176	56	77	83	100	45	1297
Birds/lin. mile	7.45	2.1	1.04	1.53	.62	.70	.72	.93	.37	11.22

* Pertains to diurnal only.

Table 5: Summary of Nocturnal Observations, Eastern Pacific Grid Cruise 3

Date	<u>22-23</u>	<u>23-24</u>	<u>24-25</u>	<u>25-26</u>	<u>26-27</u>	<u>27-28</u>	<u>28-01</u>	<u>TOTAL</u>
Hours of observ.	2	2	2.2	2	2	2	2.2	14.4
Albatross sp.	0	0	0	3	0	1	0	4
Storm Petrel sp.	0	0	0	0	0	1	1	2
Red-tail.Tropicbird	0	0	0	0	0	0	1	1
Red Phalarope	0	0	0	0	0	0	1	1
Gull sp.	3	1	1	0	4	0	0	9
Bird sp.	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>
TOTAL:	3	1	1	3	4	3	3	18

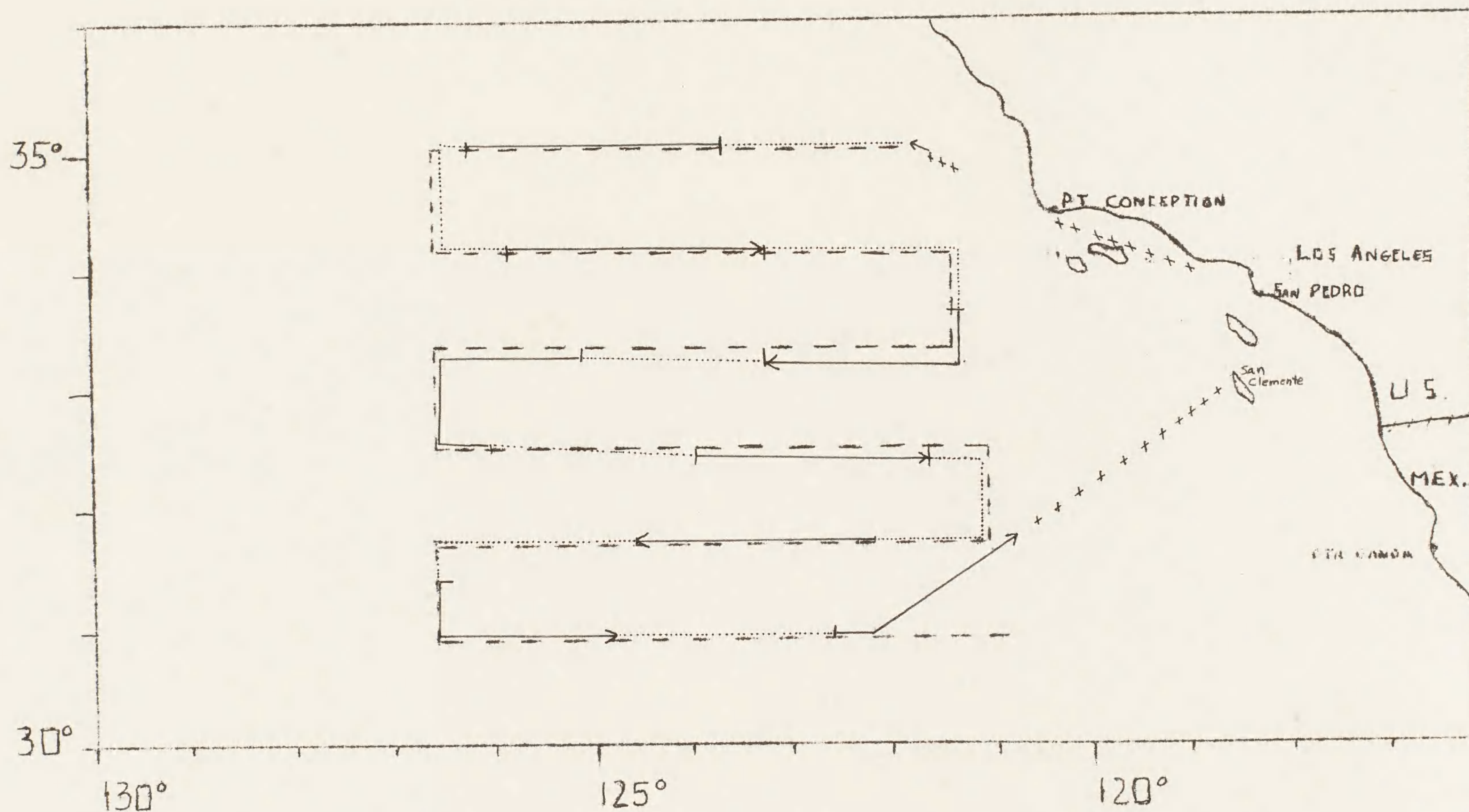
Table 6: Diurnal Density of Species Groups in Eastern Grid, 22 Feb-2March, 1967

<u>Species Group</u>	<u>No. Birds</u>	<u>Birds/lin. mile</u>	<u>Birds/ sq. mile</u>	<u>Percent of Total Birds*</u>
Albatross	35	.041	.010	4.3
Shearwater/Petrel	83	.098	.049	10.0
Storm Petrels	126	.149	.149	15.6
Tropicbirds	2	.002	.001	.2
Phalaropes	73	.086	.172	9.0
Jaegers	23	.027	.014	2.5
Large Gulls	206	.243	.122	25.4
Kittiwakes	189	.223	.112	23.3
Alcids	54	.064	.128	6.7
Miscellaneous	20	.023	.012	2.4
	<hr/>	<hr/>	<hr/>	<hr/>
	811	.956	.76	99.4

TABLE 7 Summary of Non-grid Observations

SPECIES	SAN PEDRO TO POINT "A"			POINT "C" TO SAN PEDRO		
	No. Birds seen	% of total birds	Birds per linear mile	#	%	B/Lin. mi.
Black-foot. Albatross	0	0	0	5	.3	.043
Fulmar	8	1.6	.104	40	3.2	.348
Sooty Shearwater	0	0	0	12	.9	.104
Pale-foot Shearwater	0	0	0	1	.08	.009
Pink-foot Shearwater	0	0	0	2	.2	.017
Brown Pelican	0	0	0	0	0	
Black Brant	16	3.2	.208	0	0	
Red Phalarope	0	0	0	9	.7	.078
Pomarine Jaeger	0	0	0	33	2.5	.287
Ancient Murrelet	3	.6	.039	0	0	
Rhinoceros Auklet	0	0	0	26	2.0	.228
Glaucous-winged Gull	1	.2	.013	1	.08	.009
Herring Gull	16	3.2	.208	31	2.3	.270
Ring-billed Gull	15	3.0	.195	0	0	
California Gull	10	2.0	.130	6	.5	.052
Western Gull	6	1.2	.078	3	.2	.026
Heerman's Gull	1	.2	.013	0	0	
Bonaparte's Gull	1	.2	.013	0	0	
Black-leg Kittiwake	30	6.0	..390	1109	85.4	9.640
Shearwater/Petrel	0	0	0	2	.2	.017
Cormorant Sp.	12	2.4	.156	0	0	
Duck sp.	2	.4	.026	0	0	
Jaeger sp.	1	.2	.013	8	.6	.070
Gull sp.	391	78.3	5.750	0	0	
Alcid sp.	0	0	0	10	.8	.087
Total miles:		77			115	

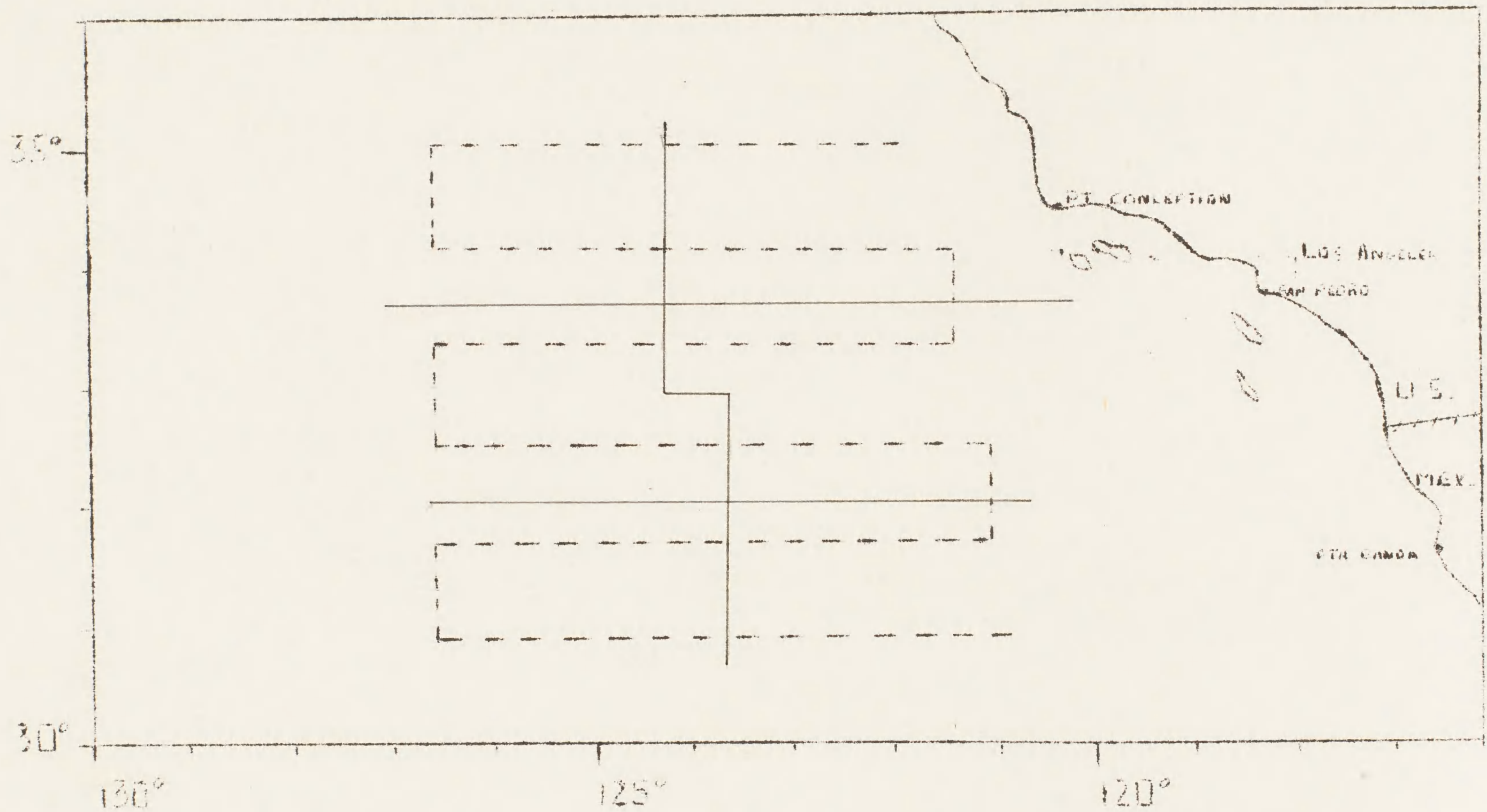
EASTERN PACIFIC OCEAN



Map 1: Eastern Pacific Grid Plan and cruise track, 22 Feb. - March, 1967

- Nominal cruise track (Grid only)
- Completed cruise track (diurnal)
- Completed cruise track (Nocturnal)
- +++++ Non-grid cruise track (diurnal)

EASTERN PACIFIC OCEAN



Map 2: Grid pattern showing east-west and north-south divisions used in tables 2 and 3.

Date 21 Feb 1967Ship Shearwater (TM-177)Cruise No. 177-03

Organization _____

Recorder _____

Sunrise: Time _____

Position: Lat. _____, Long. _____

Sunset: Time 1734Position: Lat. 34-09N, Long. 119-24W

Miles travelled from 0000 hours to sunrise = _____

Miles travelled from ^{11:15} sunrise to sunset = 64Miles travelled from sunset to 2400 hours = 66 Miles

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2.

3.

4.

5. Dept to 2400 - Bearing - Position noted hourly.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000	1042 Departure Long Beach Hbr					
1100						
1200	33-43N	118-26W	315	10	315	2 FT
1300	33-47.6N	118-35W	315	10	315	2
1400	33-53N	118-40.4W	117	8	315	3
1500	33-58N	118-58W	318	8	315	4 FT
1600	34-03N	119-07W	315	10	315	4 FT
1700	34-09N	119-23W	280	10	315	1
1800	34-12N	119-28W	280	10	315	1
1900	34-14N	119-40W	280	10	315	1
2000	34-15.5N	119-52.5W	245	10	315	1
2100	34-18N	120-03.3W	360	11	360	3
2200	34-20N	120-15W	360	11	360	3
2300	34-23N	120-28W	360	11	360	3
2400	34-28N	120-39W	010	11	010	3

L/C T-295

Date 22 Feb. 67Ship Shearwater (TAG-177)Cruise No. 177-03

Organization _____

Recorder _____

Sunrise: Time 0647Position: Lat. 35° 00' N, Long. 122° 05' WSunset: Time 1803Position: Lat. 34° 58' N, Long. 123° 40' WMiles travelled from 0000 hours to sunrise = 63Miles travelled from sunrise to sunset = 96Miles travelled from sunset to 2400 hours = 54

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2. 0800-1600 LORAN & Celestial

3. sunset To Midnight LORAN-

4.

5.

} - Novely Fix as listed -

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0000	34-28 N	120-39 W	010	11	010	3
0100	34 32 N	120 48 W	030	12	350	3
0200	34 36 N	120 59 W	025	12	355	3
0300	34° 40.6 N	121° 09 W	025	11	355	3
0400	34° 44' N	121° 20 W	025	12	355	3
0500	34° 48' N	121° 30 W	049	14	005	4
0600	34° 52' N	121° 40 W	049	14	045	4
0700	34 56 N	121° 50 W	049	16	030	4
0800	35° 00 N	122° 05 W	040	8	325	5
0900	34° 57 N	122 17 W	337	8	337	5
1000	34-58 N	122-22 W	337	8	337	5
1100	35-00 N	122-34 W	337	13	337	5
1200	35 02 N	122° 37 W	337	13	337	5
1300	35° 00 N	122° 45 W	350	13	350	5
1400	34 59 N	122° 56 W	350	13	350	5
1500	34 58 N	123 04 W	350	13	350	5
1600	34 58 N	123 16 W	000	16	340	5
1700	34 58 N	123-27 W	000	16	340	6
1800	34° 58' N	123° 39 W	000	14	340	4
1900	34 59 N	123 45 W	000	14	340	4
2000	34 58 N	124 05 W	000	16	340	6
2100	34-57 N	124-15 W	030	10	350	5
2200	34-57 N	124-25 W	030	08	350	5
2300	34-56 N	124-37 W	030	08	350	5
2400	34-56 N	124-49 W	030	08	350	5

PT. ASH
0748- CN
270°
0804 - First
Bird
0835-1203
SKIFF IN
water-

Date 23 Feb 67Ship Shearwater (TAG 177)Cruise No. 177-03

Organization _____

Recorder _____

Sunrise: Time 0659Position: Lat. 35°00'N, Long. 126°10'WSunset: Time 1811Position: Lat. 34°08'N, Long. 125°44'WMiles travelled from 0000 hours to sunrise = 62.1Miles travelled from sunrise to sunset = 106.2Miles travelled from sunset to 2400 hours = 54.2

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.				
2.				
3.				
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	34°57'N	124°58'W	032	11	020	3
0200	34°54'N	125°08'W	035	11	020	3
0300	34°58'N	125°19'W	040	10	020	3
0400	34°59'N	125°30'W	050	9	020	3
0500	35°00'N	125°40'W	055	12	030	5
0600	35°00'N	125°50'W	025	12	030	4
0700	35°00'N	126°00'W	025	12	030	4
0800	35°00'N	126°12'W	070	8	000	5
0900	34°48'N	126°25'W	030	8	000	5
1000	34°40'N	126°27'W	030	8	0000	5
1100	34°33'N	126°27'W	030	8	0000	5
1200	34°22'N	126°27'W	030	8	0005	5
1300	34°10'N	126°25'W	042	5	000	3
1400	34°10'N	126°12'W	056	5	000	3
1500	34°10'N	126°02'W	072	5	000	3
1600	34°14'N	126°01'W	090	5	000	4
1700	34°12'N	125°51'W	090	5	000	4
1800	34°13'N	125°41'W	090	5	000	4
1900	34°13'N	125°38'W	090	5	000	4
2000	34°13'N	125°15'W	090	5	000	4
2100	34-06	125-11W	CALM		CALM	
2200	34-06	124-59W	Light AIR		"	
2300	34-07	124-47W	Light AIR		"	
2400	34-07	124-36	Light AIR		"	

0100	34°57'N	124°58'W	032	11	020	3
0200	34°54'N	125°08'W	035	11	020	3
0300	34°58'N	125°19'W	040	10	020	3
0400	34°59'N	125°30'W	050	9	020	3
0500	35°00'N	125°40'W	055	12	030	5
0600	35°00'N	125°50'W	025	12	030	4
0700	35°00'N	126°00'W	025	12	030	4
0800	35°00'N	126°12'W	070	8	000	5
0900	34°48'N	126°25'W	030	8	000	5
1000	34°40'N	126°27'W	030	8	0000	5
1100	34°33'N	126°27'W	030	8	0000	5
1200	34°22'N	126°27'W	030	8	0005	5
1300	34°10'N	126°25'W	042	5	000	3
1400	34°10'N	126°12'W	056	5	000	3
1500	34°10'N	126°02'W	072	5	000	3
1600	34°14'N	126°01'W	090	5	000	4
1700	34°12'N	125°51'W	090	5	000	4
1800	34°13'N	125°41'W	090	5	000	4
1900	34°13'N	125°38'W	090	5	000	4
2000	34°13'N	125°15'W	090	5	000	4
2100	34-06	125-11W	CALM		CALM	
2200	34-06	124-59W	Light AIR		"	
2300	34-07	124-47W	Light AIR		"	
2400	34-07	124-36	Light AIR		"	

Date 24 FEBShip SHREVEWATER TAG-177Cruise No. 177-67-03Organization POBSPRecorder BridgeSunrise: Time 0647Position: Lat. 34° 10' N, Long. 123° 15' WSunset: Time 1756Position: Lat. 33-50, Long. 121-20 WMiles travelled from 0000 hours to sunrise = 70 milesMiles travelled from sunrise to sunset = 115 MilesMiles travelled from sunset to 2400 hours = 60 Miles

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2.

3.

4. LORAN - inoperative from 11 AM this Date.5. Cloudy - Dir. Navigation

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0000	34-07N	124-36	LIGHT AIRS		CALM	
0100	34-06N	124-25W	LIGHT AIRS		CALM	
0200	34-06N	124-11W	090	4	CALM	
0300	34-06N	124-02W	090	4	CALM	
0400	34-06N	123-52W	090	2	CALM	
0500	34-10N	123-36W	090	2	CALM	
0600	34-10N	123-24W	CALM		010	3
0700	34-10N	123-11W	240	8	340	3
0800	34-10N	123-58W	305	13	340	3
0900	34-10N	122-47W	240	10	240	3
1000	34-09W	122-35W	240	10	240	3
1100	34-09W	122-23W	240	10	240	3
1200	34-09W	122-09W	240	10	240	3
1300	34-10N	122-03W	240	10	230	3
1400	34-10N	121-51W	240	5	235	2
1500	34-10N	121-38W	240	9	235	3
1600	34-10N	121-25W	LT ↑	↑	235	3
1700	34-00N	121-20W	↑	↑	235	3
1800	33-50N	121-20W	AIRS		235	3
1900	33-39N	121-20W	↓	↓	235	3
2000	33-30N	121-20W	↓	↓	235	3
2100	33-20	121-20W	180	13	180	4
2200	33-20	121-30W	180	13	180	4
2300	33-20	121-43W	180	13	180	4
2400	33-20	121-55W	180	13	180	4

2. R.
Pos. t.

-PT Dogwood

-PT ELM

Date 25 FEB 1967 Ship SHARWATER (TAG-197) Cruise No. 177-67-03

Organization POBSP Recorder bridge

Sunrise: Time 0447 Position: Lat. 33°20'N, Long. 123°18'W

Sunset: Time 1813 Position: Lat. 33°18'N, Long. 125°05'W

Miles travelled from 0000 hours to sunrise = 58

Miles travelled from sunrise to sunset = 89.5

Miles travelled from sunset to 2400 hours = 57.5

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	<u>0630</u>	<u>STARS</u>	<u>33°14'N</u>	<u>123°04'W</u>
2.	<u>HOURLY SUN LINES</u>			
3.	<u>1830</u>	<u>STARS</u>		
4.				
5.				

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100	<u>33°20'N</u>	<u>122°07'W</u>	<u>315</u>	<u>13</u>	<u>320</u>	<u>5</u>
0200	<u>33°20'N</u>	<u>122°14'W</u>	<u>340</u>	<u>21</u>	<u>320</u>	<u>5</u>
0300	<u>33°20'N</u>	<u>122°32'W</u>	<u>340</u>	<u>21</u>	<u>340</u>	<u>4</u>
0400	<u>33°20'N</u>	<u>122°43'W</u>	<u>300</u>	<u>20</u>	<u>300</u>	<u>6</u>
0500	<u>33 20N</u>	<u>122-55W</u>	<u>320</u>	<u>18</u>	<u>310</u>	<u>10</u>
0600	<u>33 20N</u>	<u>123-00W</u>	<u>330</u>	<u>15</u>	<u>310</u>	<u>10</u>
0700	<u>33-14N</u>	<u>123-09W</u>	<u>330</u>	<u>15</u>	<u>310</u>	<u>9</u>
0800	<u>33-15N</u>	<u>123-18W</u>	<u>340</u>	<u>15</u>	<u>310</u>	<u>9</u>
0900	<u>33-16N</u>	<u>123 24W</u>	<u>340</u>	<u>17</u>	<u>340</u>	<u>10</u>
1000	<u>33-16N</u>	<u>123 34W</u>	<u>350</u>	<u>17</u>	<u>340</u>	<u>12</u>
1100	<u>33-17W</u>	<u>123 46W</u>	<u>360</u>	<u>17</u>	<u>340</u>	<u>12</u>
1200	<u>33-17W</u>	<u>123 57W</u>	<u>360</u>	<u>17</u>	<u>340</u>	<u>12</u>
1300	<u>33 17N</u>	<u>124 08W</u>	<u>350</u>	<u>17</u>	<u>305</u>	<u>12</u>
1400	<u>33 17N</u>	<u>124 19W</u>	<u>350</u>	<u>17</u>	<u>325</u>	<u>12</u>
1500	<u>33 14N</u>	<u>124 27W</u>	<u>350</u>	<u>18</u>	<u>325</u>	<u>14</u>
1600	<u>33 14N</u>	<u>124-38W</u>	<u>350</u>	<u>18</u>	<u>320</u>	<u>14</u>
1700	<u>33 17N</u>	<u>124 48W</u>	<u>350</u>	<u>18</u>	<u>330</u>	<u>14</u>
1800	<u>33 17N</u>	<u>125-00W</u>	<u>000</u>	<u>18</u>	<u>330</u>	<u>14</u>
1900	<u>33 18N</u>	<u>125-14W</u>	<u>015</u>	<u>17</u>	<u>330</u>	<u>14</u>
2000	<u>33°19'N</u>	<u>125°26'W</u>	<u>015</u>	<u>17</u>	<u>330</u>	<u>14</u>
2100	<u>33-19N</u>	<u>125-37W</u>	<u>015</u>	<u>17</u>	<u>340</u>	<u>14</u>
2200	<u>33-19N</u>	<u>125-48W</u>	<u>015</u>	<u>17</u>	<u>340</u>	<u>14</u>
2300	<u>33-19N</u>	<u>126-00W</u>	<u>015</u>	<u>17</u>	<u>340</u>	<u>14</u>
2400	<u>33-19N</u>	<u>126-13W</u>	<u>015</u>	<u>17</u>	<u>340</u>	<u>14</u>

} SWELL

Date Feb 26Ship SHEARWATER (FAG-177)Cruise No. 177-67-03

Organization _____

Recorder _____

Sunrise: Time 0658Position: Lat. 32°32'N, Long. 126°01'WSunset: Time 1810Position: Lat. 32-28N, Long. 123-55WMiles travelled from 0000 hours to sunrise = 75Miles travelled from sunrise to sunset = 110Miles travelled from sunset to 2400 hours = 64

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
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1. Hourly SUN LINE
2. L.A.N. Noon position
3. 1830 STAR FIX
- 4.
5. 15 min Break Down

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
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0100	33°19'N	126°26'W	090	8	350	8	- PT. FIR
0200	33°07'N	124°27'W	092	10	340	6	
0300	32°54'N	124°27'W	350	8	340	5	
0400	32°43.5'N	121°24'W	360	12	355	5	- Point GINKO
0500	32°33'N	126°26'W	000	13	340	5	
0600	32°32'N	126°13'W	035	14	340	5	
0700	32°32'N	126°01'W	035	14	340	6	swells
0800	32°38'N	125°50'W	035	14	340	8	
0900	32-28N	125°46'W	035	8	340	8	
1000	32-28N	125°36'W	035	8	240	8	
1100	32-28N	125°23'W	035	8	340	8	
1200	32-29N	125°10'W	035	8	340	8	
1300	32-29N	124°56'W	035	8	340	7	
1400	32-29N	124°49'W	035	8	340	7	
1500	32-29N	124°31'W	035	10	340	7	
1600	32-29N	124-21W	350	10	340	7	
1700	32-28N	124-09W	350	10	340	7	swells
1800	32-28N	123-57W	355	10	340	8	
1900	32-27N	123-45W	355	10	340	8	
2000	32-27N	123-32W	355	10	340	8	
2100	32-27N	123-20	340	13	345	8	
2200	32-27N	123-05	345	13	345	8	
2300	32-27N	122-53	345	13	340	7	
2400	32-27N	122-40	345	13	340	7	

Date FEB 27Ship SHEARWATER (TAG-177)Cruise No. 177-67-03

Organization _____

Recorder _____

Sunrise: Time 0635Position: Lat. 32°23' N, Long. 121°38' WSunset: Time 1804Position: Lat. 31°41' N, Long. 122°10' WMiles travelled from 0000 hours to sunrise = 58Miles travelled from sunrise to sunset = 116Miles travelled from sunset to 2400 hours = 71

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0600	STARS	32°23' N	121°39' W
2.	1800	STARS	31°41' N	122°10' W
3.				
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	32°28' N	122°28' W	345	12	345	4
0200	32°28' N	122°14' W	345	12	350	4
0300	32°28' N	122°02' W	340	13	345	4
0400	32°28' N	121°48' W	340	13	340	5
0500	32°28' N	121°43' W	345	8	350	5
0600	32°28' N	121°38' W	345	8	350	5
0700	32°23' N	121°28' W	330	8	350	5
0800	32°23' N	121°16' W	300	8	350	4
0900	32°22' N	121°02' W	315	9	330	4
1000	32°12' N	121°02' W	330	5	330	4
1100	32°01' N	121°04' W	335	5	335	4
1200	31°49' N	121°02' W	335	4	335	4
1300	31°41' N	121°02' W	340	8	335	4
1400	31°41' N	121°15' W	345	10	335	4
1500	31°40' N	121°28' W	345	10	335	4
1600	31°40' N	121°42' W	020	10	335	5
1700	31°40' N	121°56' W	020	10	335	4
1800	31°40' N	122°10' W	020	10	335	4
1900	31°41' N	122°21' W	020	10	335	4
2000	31°41' N	122°32' W	020	10	335	4
2100	31°40' N	122°44' W	025	13	350	4
2200	31°40' N	122°54' W	030	12	340	5
2300	31°40' N	123°08' W	030	12	030	5
2400	31°40' N	123°19' W	030	12	030	5

Date FEB 28Ship SHEARWATER (FAG 177)Cruise No. 177-67-03

Organization _____

Recorder _____

Sunrise: Time 0644Position: Lat. 31°40'N, Long. 124°33'Sunset: Time 1822Position: Lat. 31°32'N, Long. 124°28'WMiles travelled from 0000 hours to sunrise = 62Miles travelled from sunrise to sunset = 108Miles travelled from sunset to 2400 hours = 48

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
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1. 0630 STAR fix
2. HOURLY SUN LINES
3. 1830 STAR fix
- 4.
- 5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
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0100	31°40'N	123°32'W	030	12	035	4
0200	31-40N	123-44W	030	12	035	4
0300	31-40N	123-56W	030	12	035	4
0400	31-40N	124-08W	000	10	000	4
0500	31-40N	124-21W	000	10	000	4
0600	31-40N	124-34W	010	10	350	3
0700	31-46N	124-39	010	5	350	3
0800	31-46N	124-46W	101	5	350	3
0900	31 44N	124-55W	LIGHT	AIRS	CALM	SEA
1000	31 43N	125-05W	"	"	"	"
1100	31 40N	125-15W	"	"	"	"
1200	31 40N	125-24W	"	"	"	"
1300	31 39N	125-34W	"	"	"	"
1400	31 38N	125-45W	"	"	"	"
1500	31 37N	125-58W	"	"	"	"
1600	31 36N	126-06W	"	"	"	"
1700	31 35N	126-14W	"	"	"	"
1800	31 35N	126-27W	"	"	"	"
1900	31 20N	126-27W	"	"	"	"
2000	31 14N	126-27W	"	"	"	"
2100	30 03N	126-27W	"	"	"	"
2200	30 50N	126-20W	"	"	"	"
2300	30 56N	126-10W	"	"	"	"
2400	30 50N	125-58W	"	"	"	"

1800 PTLAN

2130 PT
MAPLE

Date 1 MARCH 1967 Ship SHEARWATER (T-AG-177) Cruise No. 177-67-03

Organization _____ Recorder _____

Sunrise: Time 0648 Position: Lat. 30°57'N, Long. 124°40'W

Sunset: Time 1807 Position: Lat. 30-50, Long. 122-34

Miles travelled from 0000 hours to sunrise = 67

Miles travelled from sunrise to sunset = 121

Miles travelled from sunset to 2400 hours = 60

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0620	STARS	30.57N	124-43W
2.	1830	Stars	30.48N	122-28W
3.	Hourly Sun Lines from 0800-1700 hrs			
4.				
5.				

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100	3050	125°48W	000	10	CAHM	—
0200	3050	125°37W	000	10	CAHM	—
0300	3050	125°26	000	11	345	2
0400	3050	125°17W	000	11	345	2
0500	3050	125°01W	000	11	010	2
0600	3050	124°49W	000	11	010	2
0700	3057N	124-38W	000	11	010	2
0800	3057N	124-26W	000	15	010	4
0900	30-55N	124-11W	005	15	010	6
1000	30-55N	123-51W	005	15	010	6
1100	30-55N	123-45	005	15	010	6
1200	3054N	123-35W	005	15	010	6
1300	3054N	123-27W	005	12	010	6
1400	3055N	123-19W	005	10	010	4
1500	3055N	123-10W	345	10	010	4
1600	3054N	122-58W	340	10	020	6
1700	3054N	122-48W	340	15	020	6
1800	3053N	122-33	340	15	020	6
1900	3053N	122-21W	340	15	020	4
2000	3052N	122-08W	340	15	020	5
2100	3057N	121-59W	345	14	345	5
2200	31-04N	121-50W	345	14	345	5
2300	31-10N	121-40W	345	12	345	5
2400	31-15N	121-31W	345	12	345	5

Date 2 MARCHShip SHEARWATER (AG-177)Cruise No. 177-47-03

Organization _____

Recorder _____

Sunrise: Time 0628Position: Lat. 30-52, Long. 120-31Sunset: Time 1753Position: Lat. 32-51, Long. 118-50

Miles travelled from 0000 hours to sunrise = _____

Miles travelled from sunrise to sunset = _____

Miles travelled from sunset to 2400 hours = _____

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
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1.

2.

3.

4.

5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	31° 21' N	121° 20' W	345	12	340	3
0200	31 27 N	121 12 W	335	14	350	4
0300	31 33 N	121 02 W	335	14	350	4
0400	31 38 N	120 52 W	335	14	355	5
0500	31-44 N	120-43 W	320	14	355	6
0600	49	35				
0700	34	27				
0800	31	18				
0900	32 30	10				
1000	34	02				
1100	14	119 54				
1200	32° 19' N	119° 46' W				
1300	25	37				
1400	32	28				
1500	30 7	19				
1600	45 7	09				
1700	53	00				
1800	58	118 51				
1900	33 04	1 42				
2000	33° 10' N	118° 33' W				
2100						
2200	23	13				
2300						
2400						